PHILIP

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Ontario. Legislative Assembly

# SESSIONAL PAPERS

VOL. XLIX.—PART IX.

THIRD SESSION

OF THE

## FOURTEENTH LEGISLATURE

OF THE

## PROVINCE OF ONTARIO

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No. 61 Copies of Orders-in-Council made under the authority of the Department of Education Act, or of the Acts relating to Public Schools, Separate Schools or High Schools. Presented to the Legislature, February 20th, 1917. *Not Printed.*

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No. 63 Return of an Address to His Honour the Lieutenant-Governor of the 16th February, 1917, praying that he will cause to be laid before this House, a Return:—1. Shewing all correspondence

(including telegrams) since January 1st, 1916, passing between the Government of the Province of Ontario or any member, officer or official thereof, and the Government of the Dominion of Canada and any officer or official thereof in reference to the machine guns purchased out of the moneys of the Province of Ontario. 2. All correspondence since January 1st, 1916, passing between the Government of the Province of Ontario, or any member, officer or official thereof, and the Imperial Government, and any officer or official thereof, in reference to machine guns purchased out of the moneys of the Province of Ontario. Presented to the Legislature, March 1st, 1917. Mr. *Bowman. Not Printed.*

No. 64 Return to an Order of the House of the 26th February, 1917, for a Return shewing:—1. How many charters or licenses have been issued to racing associations operating in Ontario since the year 1912. 2. What are the names of the racing associations or companies and the dates of the issue of the licenses or charters respectively. Presented to the Legislature, March 1st, 1917. Mr. *Carter. Printed.*

No. 65 Return to an Address to His Honour the Lieutenant-Governor of the 11th April, 1916, praying that he will cause to be laid before this House a Return shewing:—1. Copies of all letters or telegrams, since the 1st January, 1915, which have passed between the Government or any official or agent thereof, and the International Nickel Company or the Canadian Copper Company or any officers or officials thereof, in reference to the damages done to the property of the farmers and others interested in the lands adjacent to the plant of the Canadian Copper Company. 2. Of all letters and telegrams which have passed between the Government, or any officer or official thereof—and particularly the Departments of Lands, Forests and Mines and of Agriculture—and Mr. Chas. McCrea, M.P.P., of Sudbury, in reference to the matters aforesaid or the operations of the International Nickel Company or the Canadian Copper Company, and the damage being done to the property in the vicinity of the operations of the said companies; and particularly the correspondence between either of the Departments and Mr. McCrea and Mr. Ponton and Mr. Jarvis, Valuators for the Canadian Copper Company. 3. Of all Orders in Council withdrawing lands from sale for agricultural purposes, at the instance or suggestion of the Canadian Copper Company. Presented to the Legislature, March 2nd, 1917. Mr. *Carter, Printed.*

No. 66 Return to an Order of the House of the 19th February, 1917 for a Return shewing how many patients were regularly cared for in the Whitby Asylum during the year 1916. Presented to the Legislature, March 2nd, 1917. Mr. *Wigle. Printed.*

No. 67 Return to an Order of the House of the 23rd February, 1917, for a Return of copies, 1. Of the pay-rolls of the Industrial Department of the Reformatory for the Porvince of Ontario, commencing November 1st, 1915, and ending October 31st, 1916, specifying the nature of the services rendered by those whose names appear in the Return. 2. Of the monthly payments by the Industrial Department of the Reformatory for the Province of Ontario to persons whose names do not appear upon the monthly pay-roll of the Industrial Department, specifying the nature of the services rendered by those whose names appear in the Return. Presented to the Legislature, March 2nd, 1917. Mr. *Bowman. Not Printed.*

No. 68 Return to an Order of the House of the 3rd April, 1916, for a Return shewing: 1. The number of acres occupied by *bona fide* settlers on the lands purchased from the Government by Willis K. Jackson *et al.* under agreement bearing date the 14th day of June, 1912, particularizing the number of acres occupied each year since the date of the said agreement. 2. The number of settlers occupying such lands since the date of such agreement and the number respectively occupying the same for each year since the date of said agreement and the number of acres occupied by each settler. 3. The number of settlers who have lived up to the requirements of The Free Grant and Homestead Act and the regulations thereunder, and the number in default. 4. The number of farms required to be cleared by the Minister under Clause 4 of said agreement, and the actual number of such farms cleared, the amount of work performed, and the number and kind of buildings erected in accordance with the request of said Minister. 5. The number and extent of roads, bridges and other improvements, designating the nature of such improvements, required by the Minister to be done under Clause 5 of said agreement and the number and extent of such roads, bridges and other improvements completed in accordance with such request. 6. The number of schools and school buildings erected under Clause 6 of said agreement, and whether same are established and erected to the satisfaction of the Minister, also the location of such schools, particularizing those which are not satisfactory to the Minister and the reason for such dissatisfaction. 7. The amount of work required to be performed under Clause 7 of said agreement that has actually been performed, particularizing the nature and cost of such work, and the date each work was commenced and completed. 8. The number of acres cut over by the purchaser under Clause 8 of said agreement, and whether same cleared in accordance with the terms of said clause and to the satisfaction of the Minister; and whether the terms of said clause as to leaving 20 acres of wood for each farm have been complied with, and the kind of wood so left. 9. Whether all the timber cut by the purchaser has been manufactured in the townships of Kendry and Haggart,

and if not, the amount not so manufactured and the amount of timber disposed of outside of such townships, and to whom the same was sold. 10. The amount of timber that has been purchased from the settlers by the purchaser, and upon what terms were such purchases made; and how much and at what rate were the settlers paid for cutting and removing timber; and what was the rate charged to the settler for the use of the purchaser's teams. 11. The number and date of sales that have been made by the purchaser to settlers and the terms of such sales and copies of all agreements between such settlers and purchasers and as to whether the same have been approved of by the Minister. 12. The number of patents issued to settlers under Clause 13 of said agreement. 13. The extent of the lands upon which patents have been issued to the purchaser under Clause 14 of said agreement, and the nature and cost of the buildings built on same for which such patents granted. 14. All correspondence between the Government or any officer or official thereof and the purchaser or any of them, or any officer or official of such purchaser, and between the Government or any officer or official thereof and any settlers, relating to the whole or any part of the subject matter of the said agreement. Presented to the Legislature, March 6th, 1917. Mr. *Lang*. *Not Printed.*

No. 69 Return to an Order of the House of the 16th February, 1917, for a Return shewing:—1. All statements furnished by the Canada Copper Company, International Nickel Company, Mond Nickel Company, and any other company producing nickel, under section 8 of The Mining Act, respecting taxation since the 1st of January, A.D. 1915. 2. All reports from any Government Mine Assessor, made under the provisions of The Mining Act, in respect to the mining operations of the Canada Copper Company, the International Nickel Company or the Mond Nickel Company, particularly with reference to the taxes to be paid by the said companies, or any of them, under The Mining Tax Act. 3. All correspondence since the 1st day of January, 1915, between the Minister of Lands, Forests and Mines, or the Provincial Treasurer, or any officer or official of the Government, and the Canada Copper Company, the International Nickel Company, the Mond Nickel Company, and any other companies producing nickel, or any officer or solicitor for or on behalf of the said companies, or any of them, with reference to the amount of taxes or royalties paid or to be paid by the said companies or any of them, to the Provincial Treasurer of the Province, in respect of the ore mined or the mining operations carried on by them in the Province of Ontario. Presented to the Legislature, March 16th, 1917. Mr. *Carter*. *Not Printed.*

No. 70 Return to an Order of the House of the 9th March, 1917, for a Return shewing:—1. The number, kind and cost of buildings comprised in the Burwash Prison Farm property. 2. What is the number of acres of land belonging to or included in the Bur-

wash Prison Farm property, and of such land, how many acres are under cultivation, and how many acres are used for the purpose of pasture. 3. How many prisoners are there at Burwash Prison Farm. 4. What is the number of employees at the Burwash Prison Farm, and what is the amount of salary paid to each employee. 5. Were cattle or other animals shipped from the Burwash Prison Farm in the year 1916, and if so, what was the number so shipped, the total value of such shipments and the amount paid as freight charges thereon. 6. Were cattle or other animals brought to the Burwash Prison Farm from other places in the year 1916, and if so, what was the number so brought, and what were the names of the places from which said cattle or other animals were brought. Presented to the Legislature, March 16th, 1917. Mr. *Mageau*. *Printed.*

No. 71 Return to an Order of the House of the 16th February, 1917, for a Return:—1. Shewing the names of all the Townsites established by the T. & N. O. Ry. Commission. 2. Shewing all the townsite lands sold by the T. & N. O. Ry. Commission on or after July 29, 1916, the towns in which they were situated, and the amounts received for each. Presented to the Legislature, March 20th, 1917. Mr. *Bowman*. *Not Printed.*

No. 72 Copies of contracts with The Kinleith Paper Company, Limited, St. Catharines, Ontario; The Georgetown Coated Paper Mills, Limited, Georgetown; The Provincial Paper Mills Company, Limited, Toronto; authorized by Order in Council dated February 20th, 1917. Presented to the Legislature, March 21st, 1917. *Printed.*

No. 73 Return to an Order of the House of the 19th February, 1917, for a Return shewing if the Canadian Northern Railway Company applied to the Minister of Lands, Forests and Mines to designate the lands or any part of the lands to be granted to the said railway as provided in section 3, 9 Edw. VII., chap. 71. 2. Has the Minister of Lands, Forests and Mines designated any such lands or any part of the same. 3. If such lands or any part of the same have been so designated, what is the total acreage so designated, and of what townships or part of townships does the same consist. 4. Have the said lands or any part of the same been surveyed. 5. If the said lands have not been so designated, why have they not been designated. Presented to the Legislature, March 21st, 1917. Mr. *Davidson*. *Printed.*

No. 74 Return to an Order of the House of the 23rd February, 1917, for a Return shewing:—1. What amounts have been paid and upon what dates since January 1st, 1916, to the firm of Gunn, Richards and Company, Production Engineers and Public Accountants of 43 Wall Street, 43 Exchange Place, New York, or to any one acting for them, or on their behalf, on account of any

Department of the Government. 2. What amounts, if any, are still owing to the said firm or any one acting for them or on their behalf. 3. What were the services rendered in respect to which such payments were made or liability incurred. 4. By what authority was the employment of the said firm authorized. Presented to the Legislature, March 21st, 1917. Mr. *Richardson. Not Printed.*

No. 75 Return to an Order of the House of the 19th February, 1917, for a Return shewing:—1. The total capital expenditure to the end of the fiscal year for all purposes in respect to the Guelph Prison Farm. 2. Any further capital expenditures contemplated, and if so, to what amount. 3. How many prisoners, on the average, have been accommodated at the Guelph Prison Farm during the year 1916. 4. How many prisoners are now at the Guelph Prison Farm for offences against the criminal law. 5. What was the average number of prisoners at the Guelph Prison Farm during the year 1916 for offences against the criminal law. Presented to the Legislature, March 28th, 1917. Mr. *Ferguson (Kent.) Printed.*

No. 76 Return to an Order of the House of the 28th March, 1917, for a Return shewing:—1. What was the total cost of the knitting plant installed at the Mercer Reformatory, Toronto. 2. From whom was such knitting plant purchased and what was the date of purchase. 3. When was the said knitting plant installed. 4. What amount was paid to operatives up to the 1st of March, 1917, for operating the said plant. 5. What is the value of the goods produced from the knitting plant. 6. Have the goods produced by the said plant been sold, and if so, to whom. Presented to the Legislature, March 29th, 1917. Mr. *Ferguson (Kent.) Not Printed.*

No. 77 Return to an Address to His Honour the Lieutenant-Governor of the 19th February, 1917, praying that he would cause to be laid before this House a Return:—1. Of copies of all correspondence passing between the Government of this Province, or any member, officer or official thereof, and the Government of the Dominion of Canada, or any officer or official thereof, in reference to the care of Returned Soldiers. 2. Of all correspondence passing between the Government of this Province, or any member, officer or official thereof, and the Government of the Dominion of Canada, or any officer or official thereof, in reference to the establishment of Convalescent Homes for the care of Returned Soldiers. 3. Of all correspondence passing between the Government of this Province, or any member, officer or official thereof, and the Government of the Dominion of Canada, or any officer or official thereof, in reference to the relations between the Soldiers' Aid Commission and the Military Hospitals Commission of the Army Medical Service Corps. Presented to the Legislature, April 2nd, 1917. Mr. *Rowell. Not Printed.*

No. 78 Return to an Order of the House of the 21st March, 1917, for a Return of copies: 1. Of all correspondence and documents at any time passing between the Director of Industries, Ontario Reformatory, and the Assistant Provincial Secretary, referring to Alexander McPherson, foreman, Ontario Reformatory Industries, and Fred. W. French, Assistant Director of Ontario Reformatory Industries, or either of them, or relating to any matters arising between the said Alexander McPherson and Fred. W. French. Presented to the Legislature, April 2nd, 1917. Mr. *Richardson. Not Printed.*

No. 79 Copies of all Orders-in-Council made under the authority of the Department of Education Act or of the Acts relating to Public Schools, Separate Schools or High Schools, passed since the opening of the present Session of the Legislative Assembly. (*See No.* 61.) Presented to the Legislature, April 2nd, 1917. *Printed.*

No. 80 Return to an Order of the House of the 30th March, 1917, for a Return shewing: 1. What has been the cost of the Ontario Nickel Commission since the 1st day of February, 1917: (*a*) For salaries or payments by way of remuneration or honorarium to each member of the Commission respectively; (*b*) For travelling expenses of each member of the Commission respectively; (*c*) For allowance in lieu of travelling expenses to each member of the Commission respectively; (*d*) For other purposes, specifying such purposes and amounts. 2. What honorarium, remuneration or salary is payable or to be paid to the members of the Commission other than G. T. Holloway. 3. Is the Chairman, G. T. Holloway, still in the Government employ at $20,000 *per* year and $10.00 *per* day in lieu of travelling expenses, and if so when will the obligation of the Government cease. 4. Are the travelling expenses of the said G. T. Holloway from Toronto to Great Britain to be paid by the Government in addition to the allowance made to him. 5. What were the services rendered by each of the following parties in respect of which payments were made to them for salary as shown in the Return of the 16th February, 1916, respectively: Professor George A. Guess, salary, $1,250; F. Clithero, salary, $388.54; G. W. Dixon, salary, $359.03; A. L. Clark, salary, $600.00; R. N. Dickson, salary, $485.00; A. Stanfield, salary, $200.00; E. M. Tozer, salary, $306.60; E. A. Wilson, salary, $210.73. Presented to the Legislature, April 4th, 1917. Mr. *Dewart. Not Printed.*

No. 81 Return to an Order of the House of the 19th March, 1917, for a Return of copies of all correspondence between the Government of Ontario or any Member, officer or official thereof, and the Devonshire Race Track Company or any member, officer or official thereof, and in particular the correspondence between J. T. White, Esq., Solicitor to the Department of the Provincial Treasurer, and Hon. Dr. Reaume. Presented to the Legislature, April 4th, 1917. Mr. *Wigle. Not Printed.*

No. 82 Return to an Order of the House of the 28th March, 1917, for a Return of:—1. Copies of: (1) Charter of the Gore Bay Riding and Driving Association. (2) Supplementary Letters Patent, dated 17th November, 1915, increasing capital stock to $25,000, and changing name to "Northern Riding and Driving Association." (3) Supplementary Letters Patent, dated 12th February, 1916, increasing capital stock to $200,000. 2. Copies of all annual returns made by the said company. 3. Copies of all correspondence, and documents filed with the Government on the application for the issue of said Supplementary Letters Patent. 4. Copies of application for license to the Provincial Treasurer, and all correspondence and communications in connection with the issue of said license to hold a race meeting at Windsor. Presented to the Legislature, April 6th, 1917. Mr. *Wigle*. *Not Printed.*

No. 83 Report of the Horticultural Experiment Station, Vineland Station, Ontario, 1906-1915. Presented to the Legislature, April 6th, 1917. *Printed.*

No. 84 Report of the Soldiers' Aid Commission of Ontario, 1916. Presented to the Legislature, April 6th, 1917. *Not Printed.*

No. 85 Return to an Order of the House of the 12th March, 1917, for a Return shewing what was the number of prisoners in all gaols, reformatories and prisons in the Province of Ontario, on the thirtieth day of September, 1916. Presented to the Legislature, April 6th, 1917. Mr. *Parliament*. *Not Printed.*

No. 86 Return to an Order of the House of the 26th March, 1917, for a Return shewing:—1. What was the total number of members of the Inside Civil Service of the Government of the Province of Ontario and the total number in each department thereof on the 31st day of July, 1914, the 31st day of July, 1916, and the 28th day of February, 1917, respectively. Presented to the Legislature, April 6th, 1917. Mr. *Elliott*. *Not Printed.*

No. 87 Return to an Order of the House of the 16th March, 1917, for a Return shewing:—1. What tenders were received for each and every of the lots advertised for sale by George W. Lee, Commissioner of the Temiskaming and Northern Ontario Railway in the "North Bay Times" on Thursday, October 12th, 1916. 2. Which of the said lots have been sold by the said George W. Lee, the Temiskaming and Northern Ontario Railway Commission or any officer or official thereof. 3. What were the prices and terms at and upon which each and every of the said lots were sold by the said George W. Lee, the said Commission or any officer or official thereof. 4. Which of the said lots sold by the said George W. Lee, the said Commission, or any officer or official thereof, within the municipalities of Porquis Junc-

tion. Matheson, Cochrane, and Englehart, or what proportion of each and every lot so sold lies within the municipalities. Presented to the Legislature, April 6th, 1917. Mr. *Mageau*. *Not Printed.*

No. 88 Return to an Order of the House of the 21st March, 1917, for a Return of copies:—1. Of all reports for the year ending October 31st, 1916, of the superintendents of each and all the asylums, government prisons and reformatories in Ontario. 2. Of letters between Assistant Provincial Secretary and Fred Hill, relating to the dismissal of the said Fred Hill from the staff of the Ontario Reformatory at Guelph. Presented to the Legislature, April 6th, 1917. Mr. *Grieve*. *Not Printed.*

No. 89 Return to an Order of the House of the 16th February, 1917, for a Return shewing:—1. What amount has actually been paid since January 1st, 1916, for war purposes, by the Government, out of the proceeds of the Provincial War Tax. 2. For what particular purposes have such payments been made and what are the date of such payments. Presented to the Legislature, April 6th, 1917. Mr. *Bowman*. *Not Printed.*

Cutting First Crop of Oats on Farm of Mr. H. Hackford. East part, South half Lot 12, Con. 1, Township Marter.

FIFTEENTH ANNUAL REPORT

OF THE

# Temiskaming and Northern Ontario Railway Commission

ONTARIO GOVERNMENT RAILWAY

SIR WILLIAM H. HEARST, PREMIER

For Year Ended October 31st

1916

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:

Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty

1917

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

*To His Honour* Sir John Strathearn Hendrie, C.V.O., a Lieutenant-Colonel in the Militia of Canada.

*Lieutenant-Governor of the Province of Ontario.*

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the Fifteenth Annual Report of the Temiskaming and Northern Ontario Railway Commission for the fiscal year ended October 31st, 1916.

Respectfully submitted,

F. G. MACDIARMID,

*Minister of Public Works and Highways.*

Department of Public Works, Ontario,
March 7th, 1917.

Hon. Finlay Macdiarmid,

*Minister of Public Works and Highways,*

*Toronto.*

Sir.—I have the honour, by direction, to submit to the Legislature the Fifteenth Annual Report of the Temiskaming and Northern Ontario Railway Commission for the fiscal year ended October 31st, 1916.

I have the honour to be, Sir,

Your obedient servant,

W. H. Maund,

*Secretary-Treasurer.*

# Temiskaming and Northern Ontario Railway Commission.

| | | |
|---|---|---|
| J. L. ENGLEHART | *Chairman* | Petrolia. |
| DENIS MURPHY | *Commissioner* | Ottawa. |
| GEO. W. LEE | *Commissioner and General Agent* | North Bay. |

CHIEF OFFICERS.

| | | |
|---|---|---|
| W. H. MAUND | *Secretary-Treasurer* | Toronto. |
| S. B. CLEMENT | *Chief Engineer and Supt. of Maintenance* | North Bay. |
| W. A. GRIFFIN | *Superintendent of Traffic* | North Bay. |
| T. J. GRACEY | *Auditor of Disbursements and Accountant* | Toronto. |
| A. J. PARR | *General Freight and Passenger Agent* | North Bay. |
| W. A. GRAHAM | *Purchasing Agent and Storekeeper* | North Bay. |
| W. J. HARPER | *Auditor of Receipts and Car Accountant* | North Bay. |
| C. L. FERGUSON | *Paymaster* | North Bay. |
| T. ROSS | *Master Mechanic* | North Bay. |
| H. L. RODGERS | *Mechanical Engineer* | North Bay. |
| C. BATTLEY | *Air-brake Inspector* | North Bay. |
| S. H. RYAN | *Trainmaster* | North Bay. |
| R. L. LAMB | *Chief Train Despatcher* | North Bay. |
| WM. YOUNG | *Roadmaster—District No. 1* | North Bay. |
| S. J. FAUGHT, SR. | *Assistant Roadmaster—District No. 1* | North Bay. |
| J. DRINKWATER | *Roadmaster—District No. 2* | Cochrane. |
| ADAM EDWARDS | *Assistant Roadmaster—District No. 2* | Cochrane. |
| W. J. OLDHAM | *Bridge and Building Master* | North Bay. |
| J. J. DOUGLASS | *Road Foreman, Locomotives* | North Bay. |
| W. J. KELLY | *Supt. Telegraphs and Telephones* | North Bay. |
| ARTHUR A. COLE | *Mining Engineer* | Cobalt. |
| J. G. G. KERRY | *Consulting Engineer* | Toronto. |

# TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION.

## General Remarks.

Accounts and statistics for year ending October 31, 1916, herewith:

Mileage in operation on October 31st, 1916:—

*Main Line.*

| | Miles. | Miles. |
|---|---|---|
| North Bay to Cochrane | 252.29 | 252.29 |

*Branch Lines.*

| | | |
|---|---|---|
| Charlton Branch | 7.60 | |
| Porcupine Branch (includes Iroquois Falls Branch) | 40.11 | |
| Elk Lake Branch | 28.50 | |
| | | 76.21 |
| Nipissing Junction Spur (leased to Grand Trunk Railway) | ..... | 2.10 |

*Yards and Sidings.*

| | | |
|---|---|---|
| Yards and sidings, main and branch lines | 107.63 | |
| Liskeard Spur | 1 12 | |
| | | 108.75 |
| Double track, North Cobalt to Haileybury | ..... | 1.70 |

*Subsidiary Lines.*

| | | |
|---|---|---|
| Nipissing Central Railway | 13.26 | 13.26 |
| Total mileage | | 454.31 |

Following condensed statement of Revenue Account for fiscal year ended October 31, 1916, compared with 1914 and 1915. The sub-divisions of the condensed statement for 1916 are shown in full detail in the financial part of this report:—

| | 1914. | 1915. | 1916. |
|---|---|---|---|
| Revenue from transportation | $1,580,668 28 | $1,483,923 07 | $2,044,808 99 |
| Revenue other than transportation | 90,230 59 | 66,480 26 | 93,312 96 |
| Total operating revenue | $1,670,898 87 | $1,550,403 33 | $2,138,121 95 |
| Operating expenses | 1,468,574 23 | 1,356,049 87 | 1,594,177 46 |
| Net operation revenue | $202,324 64 | $194,353 46 | $543,944 49 |
| Ore royalties | $55,874 45 | $26,268 74 | $49,877 62 |
| Rent from joint facilities | ..... | 13,815 26 | 18,620 45 |
| Rent from lease of road | ..... | 16,601 37 | 13,347 04 |
| Interest | ..... | ..... | 1,736 36 |
| Miscellaneous income | ..... | 2,857 98 | 1,029 78 |
| | $258,199 09 | $253,896 81 | $628,555 74 |
| Deductions from income—hire of equipment, etc. | 29,221 86 | 43,358 18 | 99,850 28 |
| Total earnings | $228,977 23 | $210,538 63 | $528,705 46 |

Operating expenses amount to 75.1 per cent. of the gross earnings, the net earnings to 24.9 per cent., as compared with 85.6 per cent., and 14.4 per cent. respectively, for the twelve (12) months ended October 31st. 1915, and 87.8 per cent. and 12.2 per cent. for the twelve months ended October 31, 1914.

Earnings and expenses of Nipissing Central Railway are not included, but shown separately on page 423 of this report.

Total of pay rolls for the year amounted to..... $1,127,885 74

Comparison of Pay Rolls since Commencement of Operation.

| | |
|---|---|
| 1905 | $216,119 37 |
| 1906 | 450,214 02 |
| 1907 | 574,959 09 |
| 1908 | 687,541 66 |
| 1909 | 681,072 47 |
| 1910 | 878,192 07 |
| 1911 | 783,218 89 |
| 1912 | 1,090,310 65 |
| 1913 | 1,218,473 04 |
| 1914 | 1,112,866 73 |
| 1915 | 953,209 41 |
| 1916 | 1,127,885 74 |
| Total | $9,774,063 14 |

The various statements contained in the financial part of report, fully itemized, will show:

| | November 1st to October 31st. 1916. | 1915. | 1914. |
|---|---|---|---|
| Revenue per mile of road | $6,508 74 | $4,719 64 | $5,061 18 |
| Expenditure per mile of road | 4,852 90 | 4,128 00 | 4,448 06 |
| Net revenue per mile of road | $1,655 84 | $591 64 | $613 12 |
| Miles of road operated | 328.5 | 328.5 | 330.14 |

A betterment in net revenue in 1916 of $1,064.30 per mile operated over that of 1915 and an increase of $1,042.72 over 1914.

RECEIPTS.

| | 1916. | 1915. | 1914. |
|---|---|---|---|
| Revenue from transportation | $2,044.803 89 | $1,483,923 07 | $1,580,668 28 |
| Revenue from other than transportation... | 93,312 96 | 66,480 26 | 90,230 59 |
| Total | $2,138,121 85 | $1,550,403 33 | $1,670,898 87 |

Increase over 1915 ..... $587,718 62
Increase over 1914 ..... 467,223 08

EXPENDITURES.

November 1 to October 31.

| | % | 1916. | % | 1915. | % | 1914. |
|---|---|---|---|---|---|---|
| Maintenance of way and structures | 16.3 | $349,024 48 | 21.5 | $333,686 06 | 24.2 | $408,046 15 |
| Maintenance of equipment | 11.6 | 248.702 04 | 17.5 | 271,335 10 | 17. | 284,935 87 |
| Traffic expenses | 1.1 | 22,465 69 | 1.2 | 18,320 66 | 1.1 | 18,872 65 |
| Transportation expenses. | 39.4 | 842,058 75 | 40.9 | 634,160 64 | 39. | 651,687 20 |
| Miscellaneous operations. | 2.0 | 42,562 89 | 1.9 | 28,701 40 | .... | ..... |
| General expenses | 4.3 | 91,317 74 | 4.6 | 70,994 15 | 6.5 | 105,032 36 |
| Transptn for Invstmt. *Cr.* | .1 | 1,954 13 | .1 | *Cr.* 1,148 44 | .... | ..... |
| Total operating exp.. | 74.6 | $1,594,177 46 | 87.5 | $1,356,049 57 | 87.8 | $1,468,574 23 |
| Balance | .... | $543,944 49 | .... | $194,353 46 | .... | $202,324 64 |

## Maintenance of Way.

Renewal of rails, ties, ballast, etc., is fully detailed in report of Chief Engineer and Superintendent of Maintenance. The following statement shows distribution of the sums expended under the above heading, comparative 1914-15-16:

| | 1916. | 1915. | 1914. |
|---|---|---|---|
| Ballast | $5,935 63 | $3,659 33 | $15,470 56 |
| Ties | 32,643 42 | 28,845 05 | 34,700 65 |
| Rails | 4,732 84 | 8,725 46 | 21,429 22 |
| Track material—frogs, switches, etc. | 12,817 12 | 7,990 63 | 11,003 27 |
| Roadway material and track repairs | 176,661 89 | 166,392 62 | 196,797 43 |
| Removal snow and ice | 36,473 71 | 15,022 37 | 18,322 82 |
| Bridges, trestles and culverts | 9,099 40 | 30,421 75 | 30,142 15 |
| Crossings, fences and signs | 3,322 63 | 5,429 50 | 5,094 70 |
| Telegraph and telephones, railway | 5,681 91 | 3,283 81 | 7,894 22 |
| Buildings, fixtures and grounds | 29,670 93 | 28,238 13 | 44,939 89 |
| Roadway tools and supplies | 3,868 46 | 4,756 17 | 5,882 65 |
| Miscellaneous expenses | *28,116 54 | †30,921 24 | 16,368 59 |
| Total | $349,024 48 | $333,686 06 | $408,046 15 |

## Maintenance of Equipment.

The equipment has been maintained as heretofore to the highest standard of efficiency. In addition to maintenance statement below, there is shown a charge of $44,931.51, which has been added to reserve fund to cover depreciation on rolling stock, and to provide for the renewal of cars and locomotives retired, sold or destroyed.

### Equipment Repairs.

| | November 1st to October 31st. | | |
|---|---|---|---|
| | 1916. | 1915. | 1914. |
| Locomotives—repairs | $93,935 90 | $86,269 58 | $85,611 36 |
| Passenger train cars—repairs | 61,449 35 | 47,890 37 | 64,287 32 |
| Freight train cars—repairs | 34,778 69 | 16,208 51 | 32,106 29 |
| Work equipment—repairs *Cr.* | 8,876 79 | 53,658 55 | 15,472 12 |
| Total | $181,287 15 | $204,027 01 | $197,477 09 |

### Depreciation.

| | 1916. | 1915. | 1914. |
|---|---|---|---|
| Locomotive—depreciation | $15,034 59 | $14,845 56 | $14,828 22 |
| Passenger train cars—depreciation | 13,373 40 | 14,040 84 | 9,012 36 |
| Freight train cars—depreciation | 12,462 60 | 12,327 36 | 12,727 08 |
| Work equipment—depreciation | 4,060 92 | 3,337 44 | 3,337 44 |
| Total | $44,931 51 | $44,551 20 | $39,905 10 |

### Retirement.

| | 1916. | 1915. | 1914. |
|---|---|---|---|
| Locomotive—retirement | ..... | ..... | $8,391 12 |
| Passenger train cars—retirement | ..... | ..... | 3,859 40 |
| Freight train cars—retirement | $418 72 | ..... | 21,548 25 |
| Work equipment—retirement | ..... | ..... | ..... |
| Total | $418 72 | ..... | $33,798 77 |

*Includes insurance of $7,820.20; † includes insurance of $29.484.84. Under old classification, year 1914, these items were chargeable to general expenses.

SUMMARY.

| | 1916. | 1915. | 1914. |
|---|---|---|---|
| Equipment repairs | $181,287 15 | $204,027 01 | $197,477 09 |
| " depreciation | 44,931 51 | 44,551 20 | 39,905 10 |
| " retirement | 418 72 | ..... | 33,798 77 |
| | $226,637 38 | $248,578 21 | $271,180 96 |

Total for years 1914, 1915, 1916 ..... $746,396 55

ADDITIONS AND BETTERMENTS.

During the fiscal year 1916 there have been expended the amounts as shown in following statements under above heading. Similar statements for 1914-1915 are appended for comparative purposes.

| | 1916. | 1915. | 1914. |
|---|---|---|---|
| Shops, engine houses, etc. | $15,294 65 | $9,251 93 | $5,759 55 |
| Water and fuel stations | 7,444 64 | 16,606 53 | 197 71 |
| Shop machinery | 2,413 44 | 3,403 95 | ..... |
| Station and roadway buildings | 47,270 96 | 23,327 08 | 53,298 63 |
| Miscellaneous structures | 6,801 49 | ..... | 651 64 |
| Steam locomotives—additional | 205,580 09 | ..... | ..... |
| Steam locomotives—improvements | ..... | 6,000 00 | 5,671 00 |
| Passenger cars—additional | 77,500 58 | ..... | 254,399 43 |
| Passenger cars—improvements | 4,952 46 | 1,393 27 | 1,021 10 |
| Freight cars—additional | ..... | 6,763 28 | ..... |
| Work equipment—additional | 40,923 03 | 1,407 06 | ..... |
| Work equipment—improvements | ..... | ..... | 1,410 35 |
| Replacing wooden bridges with steel | 2,674 43 | 752 73 | 71,560 06 |
| Filling trestles—new culverts | 24,839 02 | 15,331 10 | 21,268 62 |
| Replacing wood trestles with concrete | ..... | 1,749 16 | ..... |
| Ties | 4,170 53 | 4,764 52 | 11,063 42 |
| Rails | 14,205 76 | 8,570 98 | 37,310 46 |
| Track materials, switches, etc. | 9,533 07 | 13,599 96 | 25,098 78 |
| | $463,604 15 | $112,921 55 | $488,710 75 |

GENERAL.

For year under review, as compared with 1914-1915, the percentages of operating expenses to operating revenue, are as follows:—

| | |
|---|---|
| 1916 | 74.6% |
| 1915 | 87.5% |
| 1914 | 87.8% |

Balance brought down from result of operation for year:—

| | |
|---|---|
| 1916 | $543,944 49 |
| 1915 | 194,353 46 |
| 1914 | 202,324 64 |

Above comparative results show that 1916 betterment over 1915 is $349,-591.03, and over 1914, $341,619.85.

*Ore Royalties.*

| | |
|---|---|
| 1916 | $49,877 62 |
| 1915 | 26,268 74 |
| 1914 | 55,874 45 |

An increase in 1916 of $23,608.88 over 1915.

| | |
|---|---|
| Net earnings for fiscal year 1916 | $528,705 46 |
| Net earnings for fiscal year 1915 | 210,538 63 |
| Net earnings for fiscal year 1914 | 228,977 23 |
| Increase 1916 over 1915, $318,166.83—151 per cent. | |
| Increase 1916 over 1914, $299,728.23—131 per cent. | |

We have transmitted to Provincial Treasurer for the year under review cheque for one million dollars—$1,000,000.

## Wages—Increase.

During the year practically all freight clerks, checkers, truckers and general station staffs, have been granted increases ranging from $5.00 to $10.00 per month. Laborers, North Bay, rate per hour increased from 18c. to 25c., with increase each employee in this class averaging approximately $20.00 per month.

Increase in wage to employees, Maintenance of Way Department, average $4,500.00 per month; Motive Power and Car Department employees $1,500.00 per month, and station agents' staffs about $500.00 per month.

Increased traffic necessitated employment of additional help at various stations, with wage increase allowed employees holding similar positions at other points.

Thus general increases were granted covering practically all branches of the service.

Full details with percentages are contained in report of Chief Engineer and Superintendent of Maintenance, page 21.

## Mines and Minerals.

Mining Engineer's preliminary report only included herein. Regular complete report for year 1916 will be specially published in usual form.

## Head Office—Toronto.

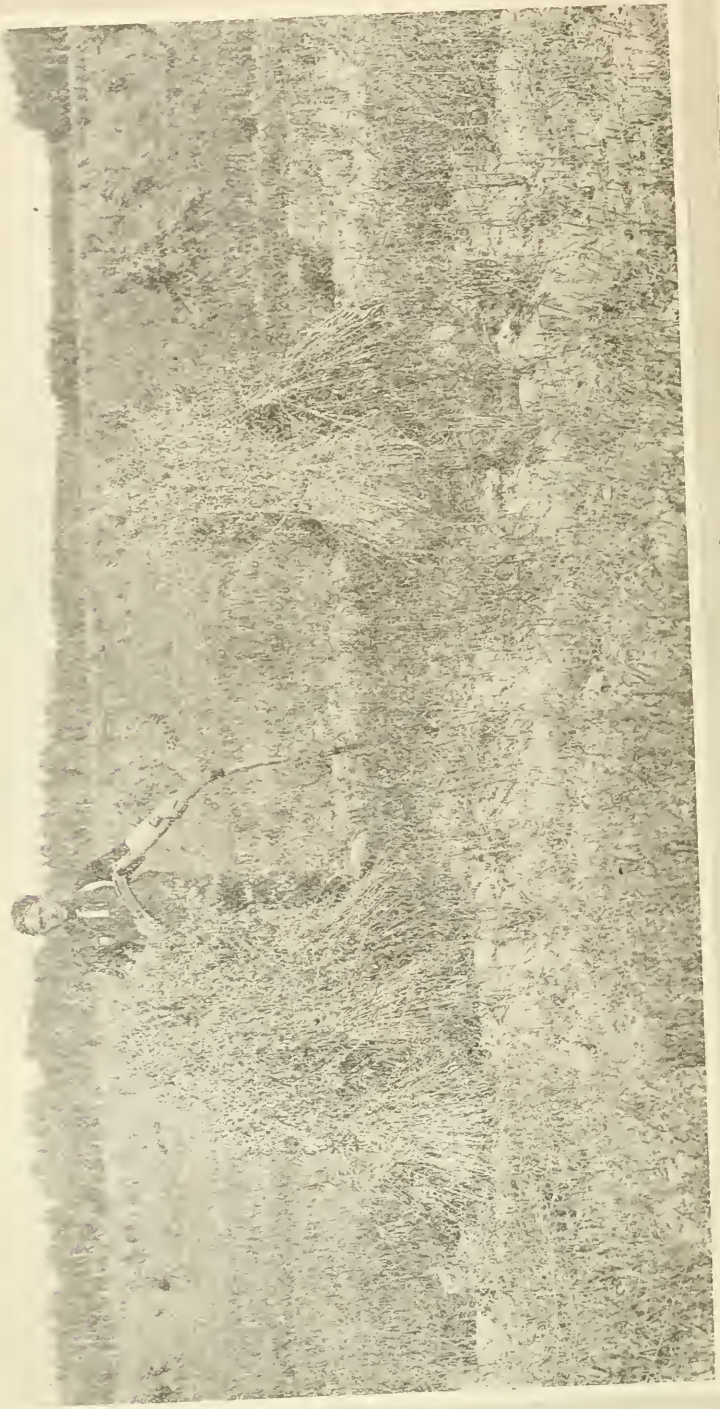
In September of present year Commission removed executive offices from 25 Toronto Street to 56 Church Street, City.

## Relief for Fire Sufferers.

During the period of distress immediately following the forest fires of July 29th-30th last, Commission put every facility of the Road at the disposition of those in charge of relief matters, et al. The following is a condensed statement of cost to Commission therein:—

*Fire Sufferers, July 29-30, 1916.*

| | |
|---|---|
| Relief trains, men and materials | $1,491 53 |
| Telegraph messages, transmitted free | 105 33 |
| Shipments in transit, diverted to use | 540 56 |
| Transportation tickets, issued free | 7,656 75 |
| Long distance telephone messages | 27 90 |
| Cost to Commission | $9,822 07 |



Farm of Mr. Oscar Prevost, Marter Township.

## Patriotic Association.

The employees of Commission formed themselves into a body known as "T. & N. O. Railwaymen's Patriotic Association," and through this source the following sums have been subscribed and paid to "Canadian Red Cross Society" and "Canadian Patriotic Fund":—

| | |
|---|---|
| Total subscription to Red Cross Society | $10,245 36 |
| Total subscription to Canadian Patriotic Fund | 12,064 52 |
| Commission's subscription | 10,000 00 |
| Total | $32,309 88 |

The above is exclusive of many personal subscriptions made direct by members of Commission and employees, and is exclusive of monthly subscriptions to the "50,000 Club" by entire office staff, Toronto.

## Roll of Honour.

Since the commencement of the war in August, 1914, up to date of October, 1916, a total of 91 employees joined the Canadian Expeditionary Forces, equivalent to over eleven per cent. (11%) of the entire number in Commission's service. In addition to this, very many men in the employ belonging to foreign nations as reservists, joined the colours of the respective countries—particularly Russians and Italians. To those joining the ranks of the Canadian Expeditionary Forces the Commission have instituted an honorary recognition therein in the form of a donation to each member, and to this end the sum of Eleven thousand five hundred and ninety-eight dollars and sixty-six cents ($11,598.66) has been disbursed.

## Workmen's Compensation Act.

Since the inception of the Act in January, 1915, the Commission voluntarily placed themselves under the jurisdiction of the Board, and during period under consideration—January, 1915, to October, 1916, inclusive, twenty-two months—the results are as follows:

Ninety-two (92) claims registered on Commission's book and submitted to Workmen's Compensation Board for adjustment:

48 Claims passed and paid.
40 Claims disallowed.
4 Claims in abeyance.

The forty-eight claims passed and paid amount to $3,807.15, an average of $70.17.

Liability insurance based on Commission's pay rolls for period would have cost $29,311.05, to protect above loss, or an average premium cost of $732.37 to protect an average award of $70.17.

| | |
|---|---|
| Insurance premium during period would be | $29,311 05 |
| W. C. Board's awards amount to | 2,807 15 |
| Cost reduction available | $26,503 90 |

### Fire Ranging.

From 1909 to 1916 inclusive, for the service of fire ranging, Commission have received from the Department of Lands, Forests and Mines the following accounts, same having been paid in due course:—

| Year. | |
|---|---|
| 1909 | $16,963 86 |
| 1910 | 10,000 00 |
| 1911 | 20,000 00 |
| 1912 | 5,000 00 |
| 1914 | 5,000 00 |
| 1915 | 10,000 00 |
| 1916 | 29,374 00 |
| Total | $96,337 86 |

### Forest Fires—Northern Ontario, July 29-30th, 1916.

Following is a statement of Commission's loss under above heading showing value of property destroyed and insurance recovered thereon. All claims presented and paid up to date of October 30th, 1916, are included herein:—

| | | |
|---|---|---|
| Buildings and structures | $33,874 10 | |
| Damage to bridges and culverts | 1,091 85 | |
| Fencing destroyed, right of way | 3,001 00 | |
| Ties destroyed in track | 2,334 35 | |
| Ties destroyed, right of way | 976 61 | |
| Rails destroyed | 2,038 40 | |
| Track material | 520 04 | |
| Telegraph and telephone | 2,688 06 | |
| Claims presented and paid | 12,485 70 | |
| Claims under adjustment | 28,531 84 | |
| Relief to fire sufferers | 9,822 07 | |
| Miscellaneous, fighting fires, clearing burned area, etc. | 14,897 23 | |
| Total | | $112,261 25 |
| Insurance recoverable | | 61,336 97 |
| Uncontrollable loss | | $50,924 28 |

In addition to above there are ninety-four freight cars of foreign roads destroyed for which claims will be presented in due course: also adjustment of values of contents of buildings destroyed, damage to work equipment and many other claims yet to be dealt with.

We have pleasure in directing attention to report of Edwards, Morgan & Co., Chartered Accountants, with reference to the accounts.

J. L. Englehart, Esq., Chairman,

*Temiskaming and Northern Ontario Railway Commission,*

Toronto, Ont.

Dear Sir,—Under instructions from the Commissioners we have maintained a running audit of the accounts of the Commission for the year ending October 31st, 1916. Our examination has included the Cash Receipts and Disbursements, Accounts Collectible, Accounts Payable, Agents' and Conductors' Accounts, Foreign Tickets, Foreign Freights, Car Mileage Accounts and Bank Balances.

We certify that all transactions relating thereto have been properly vouched, and that the Cash and Bank Balances have been duly accounted for. We have verified the balances of accounts outstanding and have ascertained that they correspond with the General Ledger Accounts.

We find the books in good order and all information asked for has been promptly given.

We are,

Yours faithfully,

(Sgd.) EDWARDS, MORGAN & CO.

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NEW SCHEDULE—ORDER OF RAILROAD TELEGRAPHERS.

Commission have now arrived at a satisfactory conclusion with Operators, Station Agents, etc., and this is embodied in an agreement between Commission and Order of Railroad Telegraphers, effective December 1st, 1916.

This agreement provides for a general increase in all salaries under above heading, amounting approximately to $7,000.00 per annum—equal to 11.7 per cent.

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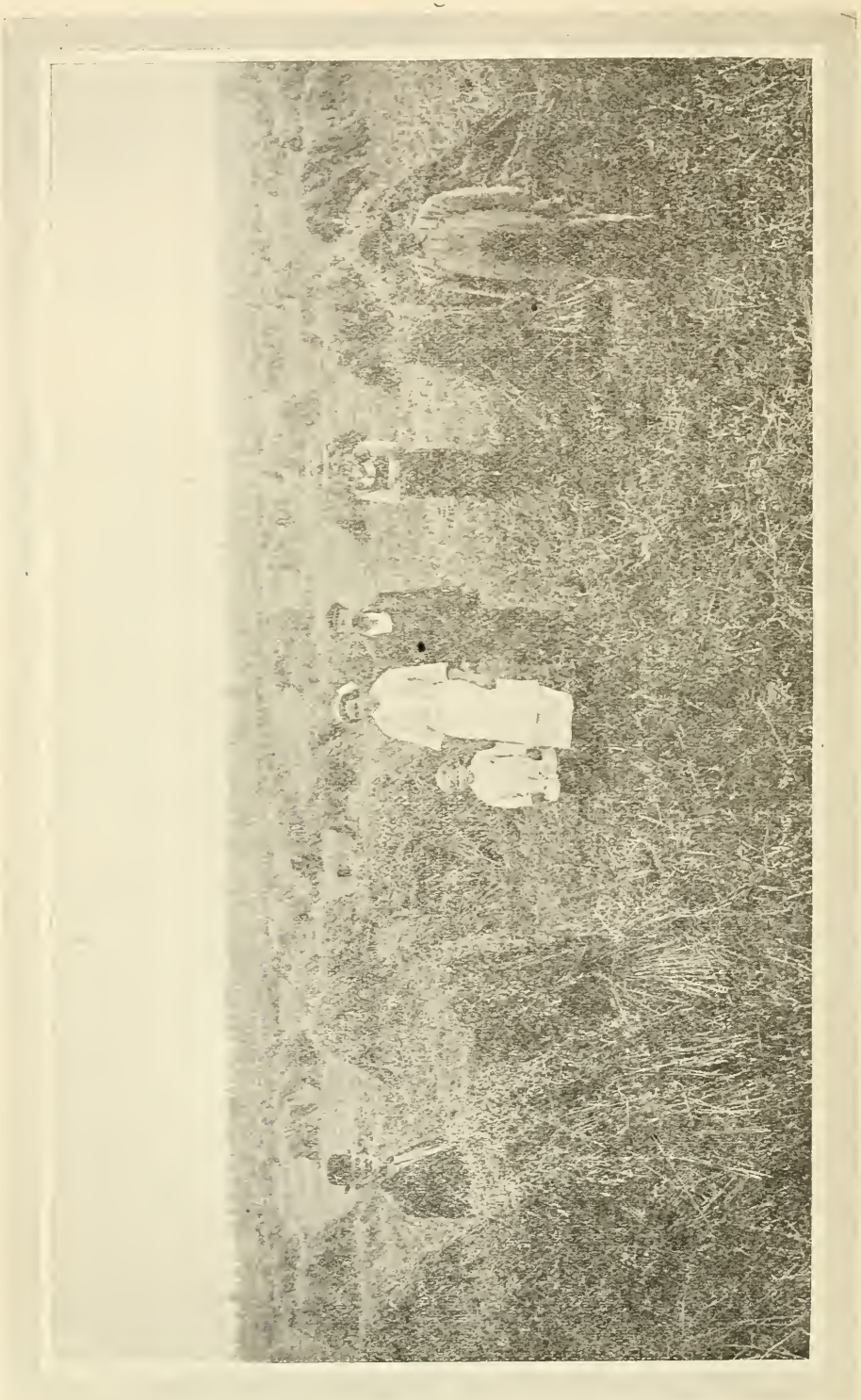


Fine yield on Farm of Mr. Wm. Schell. North half Lot 1, Con. 4, Dack Township.

# Annual Report 1916.

## Insurance—Fire.

During the year, fire insurance has been maintained on Commission's property to the extent of $1,948,895, valuation under the following headings:—

### Buildings and Contents.

| | | |
|---|---|---|
| Division No. 1—buildings | $259,230 00 | |
| " 1—contents | 157,300 00 | |
| " 2—buildings | 96.775 00 | |
| " 2—contents | 27,400 00 | |
| Kerr Lake Br. —buildings | 600 00 | |
| " —contents | 100 00 | |
| Charlton Br. —buildings | 7,100 00 | |
| " —contents | 1,300 00 | |
| Porcupine Br. —buildings | 45,300 00 | |
| " —contents | 17,000 00 | |
| Elk Lake Br. —buildings | 16,100 00 | |
| " —contents | 3,250 00 | |
| Electric Ry. —buildings | 10,425 00 | |
| " —contents | 23,040 00 | |
| | | $664,920 00 |

### Bridges and Trestles.

| | | |
|---|---|---|
| Division No. 1 | $4,600 00 | |
| Division No. 2 | 16,950 00 | |
| Kerr Lake Branch | 5,000 00 | |
| Charlton Branch | 10,150 00 | |
| Porcupine Branch | 11,750 00 | |
| Elk Lake Branch | 12,400 00 | |
| | | $60,850 00 |

### Freight.

| | | |
|---|---|---|
| Merchandise in transit | $200,000 00 | |
| | | $200,000 00 |

### Rolling Stock.

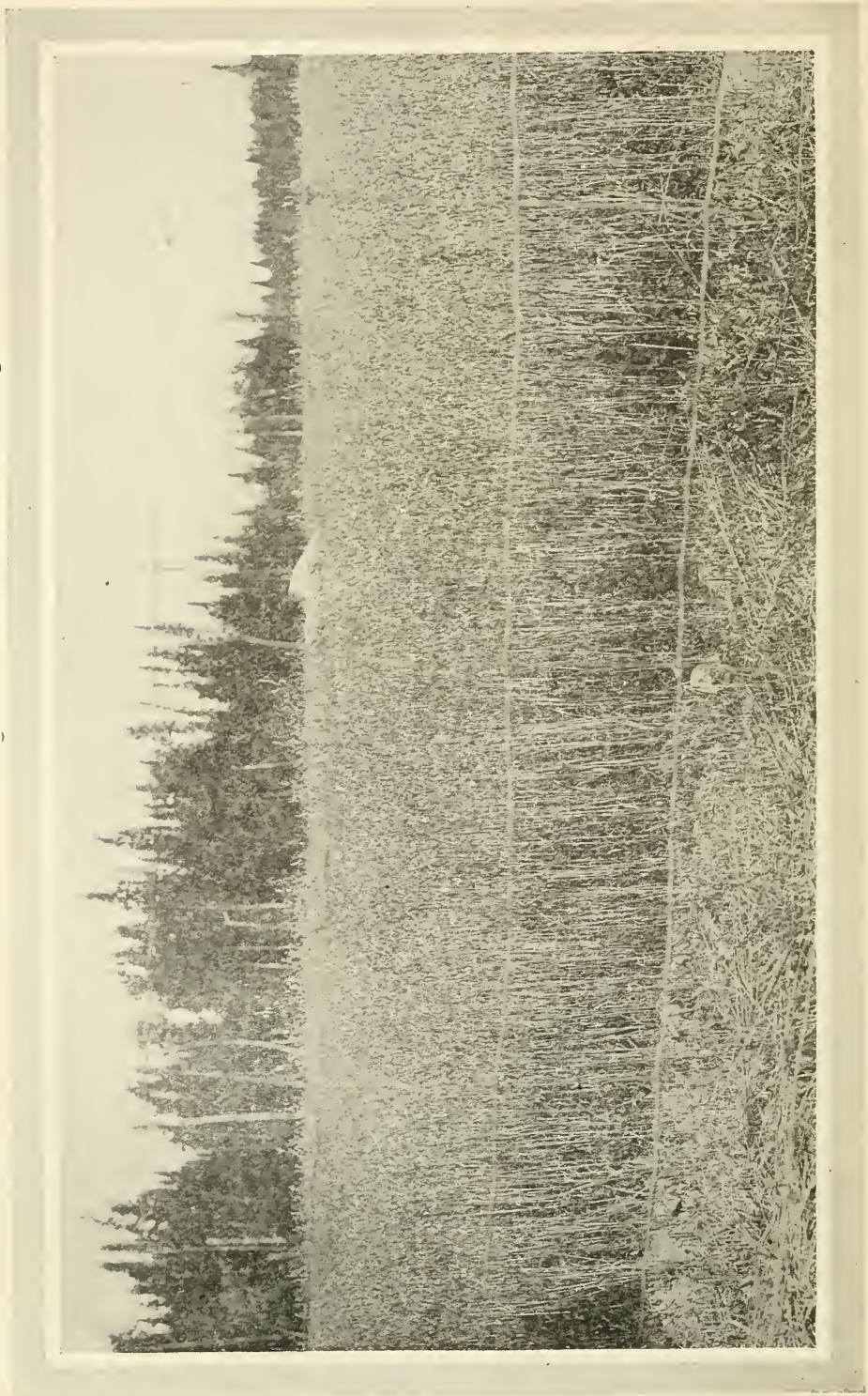
| | | |
|---|---|---|
| Locomotives and tenders | $210,000 00 | |
| Passenger equipment | 317,700 00 | |
| Freight equipment | 319,300 00 | |
| Work equipment | 81,075 00 | |
| Electric railway equipment | 45,050 00 | |
| Foreign equipment | 50,000 00 | |
| | | $1,023,125 00 |
| Total | | $1,948,895 00 |

The rate on above insurance is $1.50 per $100.00 for a period of three years, or 50c. per $100.00 per annum for period 1915-1917, inclusive.

Therefore, present rate of insurance expires at end of November, 1917.

Insurance under joint schedule is divided as follows:—

Western Assurance Co., 50 per cent.; Home Insurance Co., 35 per cent.; Norwich Union Fire Insurance Society, 15 per cent.



Oats six feet high, yielding 75 bushels per acre, on Farm of Mr. H. Hackford. South half Lot 12, Con. 1, Township Marter.

## COUNSEL'S REPORT—D. E. THOMSON, K.C.

### Litigation.

At the end of the financial year there were no actions pending in which the Commission was defendant. During the year the threatened litigation with one Balaban, administrator of the estate of Evan Koptonchuk and Messrs. Morrow & Beatty, arising out of an accident on the siding of the Abitibi Pulp and Paper Company, was compromised.

There is only one action pending in which the Commission is plaintiff, namely:

T. & N. O. vs. Abitibi Pulp and Paper Company. Action for indemnity under siding agreement in respect of the amounts paid in settlement of the Balaban and Morrow & Beatty claims above mentioned.

T. & N. O. vs. Abitibi Pulp and Paper Company No. 1. Action for compensation for lands in the Townsite of Matheson flooded by the defendant. Satisfactory settlement arrived at.

### Damage Claims.

A large number of claims have arisen during the year in respect of freight, baggage, etc., lost, destroyed, delayed, mislaid or damaged, also claims for cattle killed on the Commission's right-of-way. Most of these claims have been adjusted or abandoned while others are still pending. None have been placed in suit.

### Fire Claims.

A considerable number of claims have arisen in respect of baggage, etc., damaged or destroyed by the forest fires in July last. Some of these claims have been adjusted or abandoned while others are still pending. None have been placed in suit.

### Cobalt Intercepting Sewer

Application pending before Mining Commissioner to compel Town of Cobalt to enter into an agreement indemnifying the Commission against liability by reason of the construction or operation of the intercepting sewer laid under the right-of-way and station grounds of the Commission at Cobalt.

### Agreements, Contracts, etc.

A considerable number of agreements, leases and contracts covering various matters between the Commission and others have been prepared and executed.

### Nipissing Central Railway

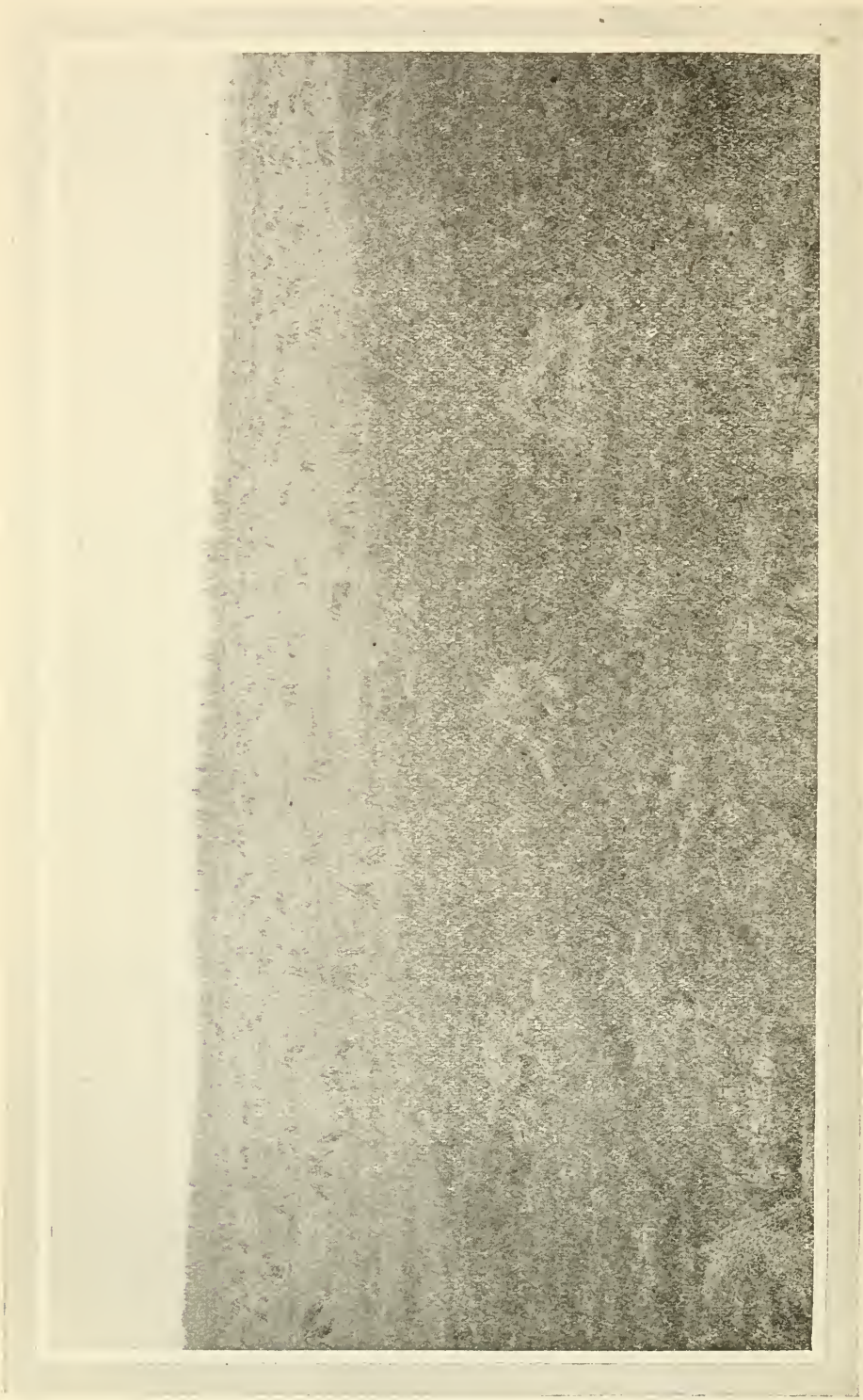
A number of claims, including those for personal injuries, were made during the year. Some have been settled and others abandoned, but in no case has a writ been issued.

### Grand Trunk Railway Company—Grand Trunk Pacific and National Transcontinental Railway.

This matter is still standing for adjustment. Meantime the Commissioners of the National Transcontinental Railway are operating a temporary through train service over the Commission's line on terms suitable for such limited service.

### Miscellaneous.

Numerous other questions on various subjects have arisen during the year calling for consideration by the Legal Department.



Wheat in the Shook on Mr. D. Stewart's Farm at Earlton.

## ANNUAL REPORT OF CHIEF ENGINEER AND SUPERINTENDENT OF MAINTENANCE T. N. & O. RAILWAY.

Year ended October 31st, 1916.

W. H. Maund. Esq.,

*Secretary-Treasurer,*
*Toronto, Ontario.*

Dear Sir,—I beg to submit the following report of the Engineering, Maintenance of Way and Mechanical Departments of the Temiskaming and Northern Ontario Railway, for the fiscal year ended October 31st, 1916.

### Mileage and Equipment.

There has been no change in the main track mileage, but a slight net decrease in the mileage of yard tracks, railway sidings and private sidings.

| Operated by The Commission: | Oct. 31, 1916. | Oct. 31, 1915. |
|---|---|---|
| First Track | 328.50 miles | 328.50 miles |
| Second Track | 1.70 " | 1.70 " |
| Yard Track and Sidings | 98.31 " | 97.96 " |
| Private Sidings | 10.44 " | 12.29 " |
| | 438.95 " | 440.45 " |
| Leased to Grand Trunk Railway: | | |
| Nipissing Junction Branch | 2.10 " | 2.10 " |
| Leased to Nipissing Central Railway: | | |
| Main Track | 10.45 " | 10.45 " |
| Yard Track and Sidings | 1.65 " | 1.14 " |
| Private Sidings | 1.16 " | 1.05 " |
| | 13.26 " | 12.64 " |

Details of all track changes are shown in statements included in this report.

The equipment owned by the Commission consists of the following:

| | Oct. 31, 1916. | Oct. 31, 1915. |
|---|---|---|
| Locomotives | 43 | 43 |
| Passenger Cars | 66 | 62 |
| Freight Cars | 620 | 644 |
| Work Cars | 89 | 69 |

### Surveys and Construction.

Surveys for revision of main line were made at several points during the year. In some places these were entirely new surveys, while in others former revision surveys were improved. Of the various lines surveyed, three were chosen for construction during the year, viz:— M.P. 54 to 55, M.P. 63.0 to 66.5 and at M.P. 81, but on account of labor conditions only the grading on the first of these was completed.

The revision between M.P. 54 and 55 is 3920 ft. long. It reduces the distance approximately 30 ft., grades–no change, number of curves by 3, maximum curve from 6° 42′ to a 3° 30′ and curvature 76° 9′.

The diversion, M.P. 63.0 to 66.5 is 3.4 miles long and will reduce the distance 866 ft. Northbound grades from 1 per cent. to 0.4 per cent. and southbound from

1 per cent. to level. Number of curves 6 and the maximum curvature from 7° to 3° and total curvature by 309° 57′.

The diversion at M.P. 81 is 1,300 ft. long and reduces the distance 50 ft., curvature 58° and maximum curve from 6° to 2°.

## Additions to Road and Equipment.

### ROAD.

During the year, there has been carried on a large amount of work that constitutes a permanent betterment to the Commission's property. The more important of these improvements and additions are:

*North Bay Junction*:

Extensive enlargements of the locomotive repair shops are now under construction, including:

Brick Extension at east end of Machine Shop 52′ 9″ x 85′ 6″.

Brick Extension on north side of Machine Shop 25′ x 100′.

New Frame Blacksmith Shop, 30′ x 80′ with an annex 20′ x 37′ to house flue-cleaning machines, to replace a smaller Blacksmith Shop torn down to permit the extension to the Machine Shop.

New Frame Wheel Shop—30′ x 80′.

This work is all being done by the Bridge and Building Department, except the brickwork, a contract for which was awarded W. A. Martyn, of North Bay. The buildings will be completed about the first of January, 1917, and will provide accommodation for a number of additional machine tools that are required to handle the great increase in repairs to locomotives.

These enlargements in the locomotive shops involved a number of minor track changes and the relocation of track scales, scrap bins, and coach truck drop pit.

M.P. 30.74.....Beam culvert replaced by a 36″ concrete pipe and embankment.
M.P. 51.5 .....Timber culvert replaced by a 30″ concrete pipe.
M.P. 55.94.....Beam culvert replaced by a 36″ concrete pipe.

*Cobalt*:

Owing to the difficulty of making satisfactory connections with the town waterworks and sewerage systems, the freight shed and office were without adequate toilet facilities. This has been overcome by the installation of a Kaustine lavatory equipment.

*New Liskeard*:

An additional spur siding 388 ft. long was laid at the wharf to provide loading accommodation for the increased traffic from Lake Temiskaming.

*M.P.* 122:

A standard frame shelter 10 ft. x 30 ft. was built for the accommodation of passengers waiting for trains at this flag stop.

*Elk Lake*:

The freight shed spur siding was extended 155 ft, and made a through siding.

M.P. 139.7 .....Timber culvert replaced by a 30″ concrete pipe.

*Englehart*:

Extensive changes were made in the arrangement of the divisional yard, including new rip and coach tracks and yard sidings and switching leads. These changes will greatly increase the capacity of the yard and the convenience with which it can be operated.

*Boston Creek*:

A temporary frame building 20 x 30 ft. was built to protect way freight at this promising mining camp.

M.P. 162.3 ..... Large timber trestle replaced by a double 19' 0" span reinforced concrete culvert. Trestle filling not completed.

*Ramore*:

A spur siding 460 ft. long to provide accommodation for shipments of forest products, etc., under construction at the beginning of the year, was completed.

*Matheson*:

All of the buildings on the station grounds were destroyed by the forest fire of July 29th last. These included a stone passenger station, frame freight shed, two standard frame section houses and one section tool house. These have all been completely rebuilt by our own forces except the passenger station, which will be completed about February 1st, 1917. In the meantime, the freight shed is used as a passenger station.

The Canadian Stewart Company is building a large dam for the Abitibi Power and Paper Company at Twin Falls on the Abitibi River and all the plant and material required for this work are barged from Matheson. This traffic is switched from the station grounds to the Black River over a spur built by the Canadian Stewart Company under private siding agreement.

*Monteith*:

Private sidings were built to serve the mill and yards of the Monteith Pulp and Timber Company, which has a very important industry on the Driftwood River at Monteith.

M.P. 214.5 ..... Timber culvert replaced by a 30" concrete pipe.

*Nushka*:

The section house, section tool house and shelter station were destroyed by fire on July 29th. The section house and tool house have been rebuilt by our own forces.

M.P. 224.0 ..... Beam culvert, destroyed by fire of July 29th, replaced by a 6' x 6' reinforced concrete culvert.

*Porquis Junction*:

The 100-ton Roberts & Schaeffer Mechanical Coaling Plant and the 41,600-gallon Steel Water Tank under construction at the close of last fiscal year, were completed.

A frame dwelling was built for the operator of the coaling plant and water station.

An Alfalfa Seed Plot on Farm of Jno. McFarlane, near New Liskeard.

A man sitting on a kitchen chair in field of Red Clover. This field yielded three bushels to the acre of seed. Lot 1, Con. 2, Township Clergue.

*Cochrane*:

A new frame freight shed 30 x 160 ft. was built to replace the shed destroyed by fire on July 29th. A frame building 14 x 33 ft. was built for the use of the Car Department.

*Iroquois Falls*:

Two pairs of semi-detached dwelling houses for employees are under construction. These houses will be fitted with all modern conveniences with connections to the town sewers, hot air furnaces, electric lights, etc.

*Timmins*:

A contract for a new brick passenger station 33 x 126 ft. was awarded Messrs. Henderson and Angus of North Bay.

The building is constructed on 24 in. concrete foundation walls, supporting 13 in. exterior brick walls and 9 in. interior cross walls. The peaked roof is covered with red asbestos shingles to harmonize with the buff pressed brick finish and Indiana limestone trimmings.

The floor plan provides accommodation for waiting rooms, ticket office, telegraph office, baggage room and two express rooms.

The waiting room floors are constructed of reinforced concrete and finished with hardwood. The adjoining lavatories have a Terrazzo flooring.

The floors of the ticket office and telegraph office are of plain concrete and finished with hardwood and in the baggage and express rooms plain concrete is used.

All rooms except baggage and express rooms will be finished in black ash, with walls plastered and painted.

Electric gas-filled pendant fixtures will be installed.

The building will be heated by the Dunham steam vapor system.

It is expected that the station will be completed by the end of the calendar year, when the present frame combined passenger station and freight shed will be used exclusively as a freight shed and office.

Additional shed and team sidings will be provided in the local freight yard.

*Porcupine Branch.*

M.P. 0.5 .....**Two 30" corrugated iron culverts replaced by a 6' x 6' reinforced concrete culvert.**

The above and other additions and betterments are summarized in the annexed statements.

## EQUIPMENT.

Additions to the equipment include two all-steel baggage and express, two all-steel first class coaches, eighteen Hart cars, one steel underframe Jordan spreader and two tank cars for fire protection. Delivery of six new "Mikado" type locomotives and six steel underframe vans is expected early in the coming year.

This new equipment and betterments to other equipment is very fully described in the special report of the Master Mechanic, which accompanies this report.

## Maintenance of Way.

The safety of the track and structures continues to receive the first consideration of an efficient and faithful staff of officials and employees. Notwith-

standing the great scarcity of labor and difficulty in obtaining materials, the standard of maintenance has been well maintained, as is witnessed by the relative freedom from derailments, which is the cause for great thankfulness.

The maintenance programme that is being followed will insure a steady improvement in track conditions. This report includes comparative statements clearly showing this improvement.

## General Conditions.

During the past year, the Temiskaming and Northern Ontario Railway has handled the largest traffic in its history, and this under conditions that were exceptionally unfavorable. The conditions included:— a shortage of motive power, an exceptionally severe winter, a great scarcity of labor and material and the disastrous forest fires.

It was anticipated that the through traffic between Cochrane and North Bay following the opening of the Transcontinental Railway, would be handled by the Grand Trunk Railway under its Running Rights' Agreement. The Grand Trunk Railway failed to make this agreement operative, and it was necessary for the Commission to move this traffic with its own power. For the first winter this was overtaxed, but arrangements were made for the purchase of additional locomotives which are now being delivered.

The winter of 1915-16 was exceptionally severe. A very heavy snow fall was accompanied by long periods of very cold weather. This not only restricted train movements but increased operating expenses, as will be seen from the following statement of expenses for Removal of Snow and Ice for the years 1910 to 1916 inclusive:

| 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 |
|---|---|---|---|---|---|---|
| $14,812.76 | $21,137.41 | $23,300.74 | $24,940.30 | $18,322.82 | $15,022.37 | $36,259.44 |

The withdrawal of labor due to enlistments for Overseas' Service and the increased demands of the mines and pulp and paper mills served to accentuate in this district the general shortage of labor throughout the Province. It was impossible to obtain a sufficient supply of labor for the Maintenance of Way and Motive Power Departments and the progamme of Maintenance and Betterment work was of necessity considerably modified and curtailed.

The forest fires of July 29th still further complicated the situation by greatly increasing the amount of work to be accomplished through the reconstruction of buildings destroyed.

## Wages of Employees.

The machinists in the Motive Power Department and the employees in the Car and Maintenance of Way Departments work under "Rules and Rates of Pay" formally agreed upon between their organizations and the Commission. Applications for "Revised Rules and Increased Rates of Pay" were made by the machinists and the Car Department and Maintenance of Way Department employees. After a series of friendly conferences, new agreements were signed with the machinists and Car Department employees. An agreement with the Maintenance of Way employees has not yet been reached, but it is expected that it will be completed early in the year 1917.

During the year, general increases have been made in the rates of pay of all employees in the Motive Power, Car and Maintenance of Way Departments.

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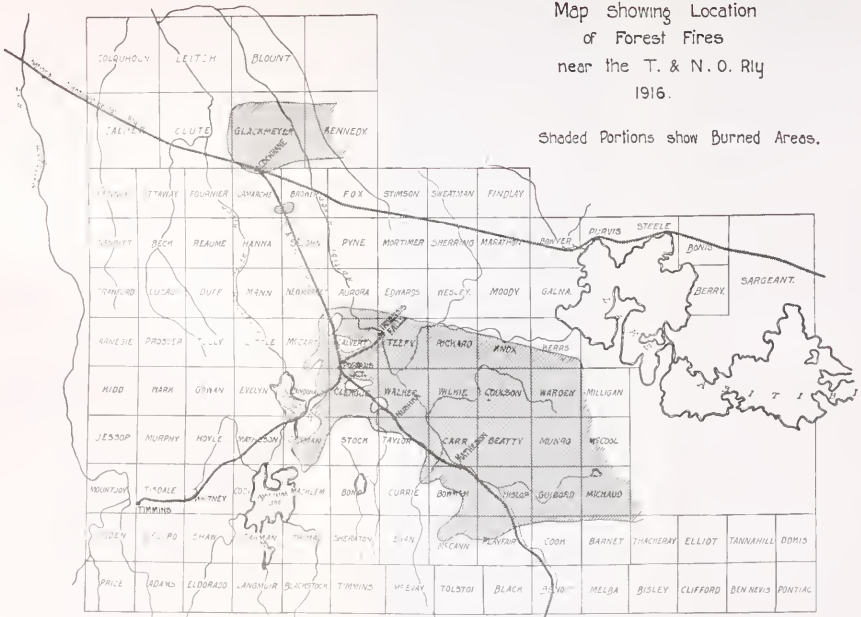

Map Showing Location
of Forest Fires
near the T. & N. O. Rly
1916.
Shaded Portions show Burned Areas.
COLQUHOUN
LEITCH
BLOUNT
TALLEYR
CLUTE
GLACKMEYER
KENNEDY
FOX
STIMSON
SWEATMAN
FINDLAY
DAVIS
STEELE
BONIS
BERRY
SARGEANT
FOURNIER
LAMARCHE
BRUNETTE
BECH
BEAUME
HANNA
PYNE
MORTIMER
SHERRING
MARTINEAU
ROWE
FRANKLIN
LUCAS
DUFF
MANN
AURORA
EDWARDS
WESLEY
MOODY
GALNA
GANESHE
PROSSER
TILLY
MCCART
TILLEY
RICHARD
KNOX
KIDD
MARK
GORAN
EVELYN
WALKER
WILKIE
COLLISON
WARDEN
MILLIGAN
JESSOP
MURPHY
HOYLE
STOCK
TAYLOR
CARR
BEATTY
MUNRO
MCCOOL
MOUNTJOY
TISDALE
TIMMINS
BOND
CURRIE
BOWMAN
TAYLOR
GUIBORD
MICHAUD
SHARP
SHERATON
LYON
MCCANN
MCARTHUR
COOM
BARNET
THACHERAY
ELLIOT
TANNAHILL
DOMIS
PRICE
ADAMS
ELDORADO
LANGMUIR
BLACKSTOCK
TIMMINS
MCELVEY
TOLSTOI
BLACK
ASSIGNACK
MELBA
BISLEY
CLIFFORD
BEN NEVIS
PONTIAC

*Motive Power Department*:

The increases in rates of pay for machinists in the Motive Power Department that became effective May 1st, 1916, vary from 5.6 per cent. to 9.1 per cent.

The other trades in the Motive Power Department, not included in the schedule, subsequently received very substantial increases, varying from 7.8 per cent. to 32.5 per cent., and now receive the new Canadian Pacific Railway rates for similar trades at North Bay.

*Car Department*:

The increases in wages of Car Department employees became effective July 1st, 1916, and vary from 6.1 per cent. to 25 per cent.

*Maintenance of Way Department*:

The employees of the Maintenance of Way Department asked for increases of approximately 18 per cent. to 20 per cent. on their existing schedule, and are now actually receiving various increases. These have not been formally accepted by the organization. It is believed that an early settlement will be reached.

The demands of the munitions factories have made it extremely difficult to obtain deliveries of certain classes of materials. The Munition Board demands that the requirements of plants working on war orders receive preference. This makes it necessary that our orders be reduced, but we are co-operating with the rolling mills as closely as possible.

## Forest Fires.

The accompanying map shows the areas in the vicinity of Matheson and Cochrane burned over in the forest fires of July. The fires appear to have been burning for some weeks around the settlers' clearings near the railway before the strong gale of July 29th united them in a huge conflagration extending from Ramore to Nellie Lake and travelling in a southeasterly direction at a rate variously estimated at from 25 to 40 miles an hour. Similar conditions obtained at Cochrane where the front of the fire was about eight miles in a north and south direction and the course was almost due east.

At Nahma the fire travelled north-east but did not extend far beyond the track. While the fire swept over the entire area shown, the damage to the timber in different sections varied greatly. Where there was any slashing or windfalls, the standing trees were entirely destroyed. In places where there is little undergrowth the trees are generally fire killed but not damaged very badly for lumber or pulp. In some thinly timbered areas the larger trees are not even killed, though there are places as at Nushka where even large whitewoods are burned down, and throughout the whole area a great deal of additional loss has occurred through trees being uprooted by the wind after the covering had been burned off the roots.

In any estimate of the damage to the forest it must be noted that on a very large percentage of the area burned over this year, the timber had been destroyed by previous fires, notably by those of 1905 and 1911. And on these old "brules" the conditions for settlement have been greatly improved by the lessening of the labor required to clear the land, and by the removal, though at a deplorable cost, of further danger to life and property by fire.

The villages of Matheson, Nushka and Kelso and a number of smaller settlements were completely destroyed. Several hundred settlers were rendered homeless and two hundred and twelve people perished.

So intense was the fire that it is marvellous that anything within the area it covered was not consumed. Through good fortune and the strenuous efforts of our employees, who made great use of one of the Commission's tank cars, all the railway buildings at Porquis Junction were saved. This break in the fire saved the greater part of the village of Porquis Junction, the fire burning only a few buildings at its northern end.

The following railway structures were burned:

| Location. | Buildings. | Construction. |
|---|---|---|
| Belleek | Shelter station | Frame. |
| Matheson | Station | Stone. |
| | Freight shed | Frame. |
| | Section house No. 1 | Frame. |
| | Wood shed No. 1 | Frame. |
| | Section house No. 2 | Frame. |
| | Wood shed No. 2 | Frame. |
| | Tool house | Frame. |
| Nushka | Tool house | Frame. |
| | Section house | Frame. |
| | Wood shed | Frame. |
| | Shelter station | Frame. |
| Kelso | Station and freight shed | Frame. |
| Wicklow | Wood shed | Frame. |
| | Section house | Frame. |
| | Tool house | Frame. |
| Cochrane | Freight shed | Frame. |
| Iroquois Falls | Tool house | Frame. |
| | Oil house | Frame. |
| | Engine shed and bunk house | Frame. |

A portion of the deck of the Wataybeag River Bridge and a number of timber culverts were burned and have been renewed.

The Commission also suffered a heavy loss through the destruction of fences, ties, rails and other Maintenance of Way material and tools, including:

Fence—1,600 rods destroyed.
Ties, 8'—11,320 destroyed; 1,775 damaged.
Ties, switch sets—5½ sets destroyed.
Rail—3,533 feet destroyed; 2,033 feet damaged.
Sundry track materials.
Track tools (contents of tool houses burned.)

The loss of rolling stock was as follows:

| Location. | Number of cars |
|---|---|
| Belleek | 16 |
| Matheson | 6 |
| Nushka | 2 |
| Siding, M. P. 216.6 | 2 |
| Wataybeag pit | 1 |
| Kelso | 10 |
| Siding, M. P. 226.8 | 2 |
| Siding, M. P. 245.5 | 1 |
| Cochrane | 2 |

*Iroquois Falls Branch*:

| | |
|---|---|
| M. P. 1.9 | 3 |
| Onagon | 2 |
| Iroquois Falls | 62 |
| Total | 109 |

In addition to the above, a steam railway ditcher and a rapid unloader were badly damaged at Kelso.

Of these, 94 were foreign cars, only six of which could be repaired and returned to their owners. Adjustment of losses on foreign cars is now being made with the owners under M.C.B. Rules.

## Comparative Statements.

### FENCING.

The following right of way and station grounds fence was repaired and renewed:

| | | Length—Rods. |
|---|---|---|
| *Second Division.* | | |
| M.P. 223-224 | Burned July 29th, 1916 | 640 |
| Iroquois Falls | " " " | 140 |
| *Iroquois Falls Branch.* | | |
| M.P. 1-4 | " " " | 1,920 |
| *Porcupine Branch.* | | |
| M.P. 30½-31½ | | 640 |
| Total | | 3,340 rods or 10.4 miles |

New standard right of way and station grounds fencing was constructed as follows

| | | Length—Rods. |
|---|---|---|
| North Bay | Stores and motive power office | 95 |
| M.P. 145½ | Extra land—piling ground | 90 |
| M.P. 208 | Right of way | 36 |
| Nushka | Section house site | 27 |
| Monteith | Station grounds | 17 |
| Iroquois Falls | Section house site | 25 |
| M.P. 227 to M.P. 230 | Right of way | 1,000 |
| M.P. 245½ | Piling ground | 60 |
| Nahma | Station grounds | 215 |
| *Elk Lake Branch.* | | |
| Leeville | Right of way | 200 |
| *Porcupine Branch.* | | |
| M.P. 2 to 3 | Right of way | 230 |
| Schumacher | Station grounds | 20 |
| Total | | 2,015 rods or 6.29 miles |

The progress in fencing the right of way is indicated in the following statement:

| Year. | New fencing Constructed. | Total right of way fenced. |
|---|---|---|
| 1913 | 7.77 miles | 155.0 miles |
| 1914 | 21.89 " | 165.9 " |
| 1915 | 10.98 " | 171.39 " |
| 1916 | 6.29 " | 174.54 " |

*Private Sidings:*

The following statement includes all private sidings laid or extended during the year:

| Location. | Name. | Length. | Remarks. |
|---|---|---|---|
| *Main Line.* | | | |
| North Bay | Standard Planing Mills Co. | 427 ft. | Second siding. |
| Cobalt | Right of Way Mines | 262 " | |
| North Cobalt | Northern Lumber Mills | 109 " | Extension on existing private siding. |
| Matheson | Canadian Stewart Co. | 3,254 " | To handle contractors' supplies. |
| Monteith | Monteith Pulp & Timber Co. | 2,898 " | Three sidings to new mill. |
| Potter | Canadian Pulp & Lumber Co. | 373 " | To load pulpwood. |
| *Porcupine Branch.* | | | |
| M.P. 12 | Terry & Gordon | 329 " | To serve sawmill. |
| Drinkwater Pit | A. C. White | 686 " | Extension of railway siding to load pulpwood. |
| Timmins | Northern Canada Supply Co | 13 " | Extension on existing private siding. |
| | Hollinger Gold Mines | 115 " | Extension on existing private siding. |
| | Total | 8,466 ft. | |

The following includes all private sidings removed or shortened:

| Location. | Name. | | Remarks. |
|---|---|---|---|
| *Main Line.* | | | |
| Trout Lake | | 1,267 ft. | |
| Tomiko | Ferguson & McFadden | 3,175 " | Portion of mill yard sidings. |
| Temagami (M.P.75.7) | Wm. Milne & Sons | 784 " | |
| M.P. 79.6 | Black & Wagar | 850 " | |
| Latchford | Empire Lumber Co. | 9,074 " | |
| Gillies Depot | Gillies Bros. | 584 " | Siding shortened. |
| M.P. 110¾ | New York Pulp & Paper Co. | 340 " | |
| New Liskeard | | 595 " | Abandoned brickyard. |
| M.P. 120 | McKnight & Jones | 375 " | |
| Earlton Jct. | McBurney Lumber Co. | 613 " | |
| *Porcupine Branch.* | | | |
| Porcupine | Wm. Milne & Sons | 321 " | |
| S. Porcupine | Dome Mines | 270 " | Siding shortened. |
| | Total | 18,248 ft. | |

*Meeting, Yard and Loading Sidings:*

The following new sidings or extensions to existing sidings have been constructed to provide accommodation for loading and unloading freight or for greater convenience in operating terminal yards:

| Location. | Description. | | Length. |
|---|---|---|---|
| North Bay Jct. | Spur siding No. 10 | extended | 104 ft. |
| | Spur siding No. 11 | " | 667 " |
| | Auxiliary siding | " | 28 " |
| | Coach track No 1 | " | 240 " |
| New Liskeard | Spur siding at wharf | new | 388 " |

| Location. | Description. | | Length. |
|---|---|---|---|
| Englehart | Coach track | " | 873 " |
| | Rip tracks No 1 | " | 767 " |
| | Rip tracks No. 2 | " | 1,088 " |
| | Lead north yard | extended | 994 " |
| | New yard siding No. 2 | new | 3,502 " |
| | New yard siding No. 3 | " | 2,151 " |
| | Cross-overs (3) | " | 528 " |
| | Engine lead | " | 1,422 " |
| | Engine lead | " | 377 " |
| Ramore | Loading spur | " | 460 " |
| Porquis Jct. | Through siding | extended | 1,155 " |
| | No. 3 siding | " | 537 " |
| | Loading spur | new | 704 " |
| | Cross-overs (2) | " | 320 " |
| | Mechanical coaling station | " | 226 " |
| Cochrane | Freight shed spur | " | 1,023 " |
| *Elk Lake Branch.* | | | |
| Elk Lake Branch freight shed | | extended | 155 " |
| | Total | | 17,709 ft. |

The following public or railway sidings were taken up or shortened:

| Location. | Description. | Length. |
|---|---|---|
| North Bay | Rip track—shortened | 60 |
| Pit, M. P. 7.75 | Pit tracks—shortened | 1,431 |
| " 17 | " —taken up | 2,232 |
| " 25 | " —taken up | 3,951 |
| Jocko | Loading spur—shortened | 728 |
| M. P. 81.6 | Spur to Pyrite Mine—taken up | 5,757 |
| Kerr Lake Jct. | Engine shed siding— " | 302 |
| New Liskeard | Loading siding— " | 244 |
| Englehart | Cinder pit siding No. 3—shortened | 400 |
| | South yard sidings (5)— " | 522 |
| | Van siding— " | 33 |
| | Cross-over— taken up | 176 |
| Charlton | Freight shed siding— shortened | 28 |
| | Total | 15,864 ft. |

*Tie Renewals:*

Track ties were renewed as follows:

| — | Main Track. | Sidings. | Private Sidings. | Total. |
|---|---|---|---|---|
| First Division | 30,855 | 5,462 | 31 | 36,348 |
| Second Division | 41,628 | 5,558 | ..... | 47,186 |
| Kerr Lake Branch | 1,931 | ..... | ..... | 1,931 |
| Elk Lake Branch | 193 | ..... | ..... | 193 |
| Charlton Branch | 2,533 | 189 | ..... | 2,722 |
| Porcupine Branch .... Iroquois Falls Branch | 4,427 | 30 | ..... | 4,457 |
| | | | Total..... | 92,837 |

Sixteen sets of switch ties were also renewed.

The following table gives a comparison of track tie renewals for the last three years:

| Fiscal Year. | Main Line. | | Branch Lines. | | Sidings and Spurs. | |
|---|---|---|---|---|---|---|
| | Total. | Per Mile of Track. | Total. | Per Mile of Track. | Total. | Per Mile of Track. |
| 1914 | 87,259 | 346 | 290 | 3 | 9,414 | 88 |
| 1915 | 87,948 | 348 | 3,683 | 46 | 11,680 | 106 |
| 1916 | 72,480 | 287 | 9,084 | 114 | 11,270 | 107 |

*Ballasting*:

Main track reballasted with gravel ballast during the year:

| — | Miles of Track. | Yards Ballast. | Remarks. |
|---|---|---|---|
| First Division : | | | |
| M.P. 26-34 | 8.00 | 14,570 | |
| M.P. 52-54 | 2.00 | 1,200 | |
| Elk Lake Branch : | | | |
| M.P. 15-19 | 4.00 | 2,700 | |
| Porcupine Branch : | | | |
| M.P. 3¼-5 | 1.75 | 450 | Patching. |
| Total | 15.75 | 18,920 | |

Comparing with total miles of track reballasted previous years:

| — | 1910 | 1911 | 1912 | 1913 | 1914 | 1915 | 1916 |
|---|---|---|---|---|---|---|---|
| Miles Track | 44.0 | 52.5 | 47.0 | 22.5 | 19.0 | 10.0 | 15.57 |
| Yards Ballast | 51,480 | 62,370 | 72,420 | 29,170 | 29,720 | 14,170 | 18,920 |

*Miscellaneous Betterments*:

| | 1915. | 1916. |
|---|---|---|
| Timber trestle replaced by embankment | 1,220 lin. ft. | 0 feet |
| Concrete tile used for culverts | 1,555 " | 1,556 " |
| Corrugated iron | 496 " | 146 " |
| Tile drain to underdrain roadbed | 1.86 miles | 0.56 miles |
| Embankments restored to width by train-filling over a total of | 109.75 " | 26.5 " |
| New right-of-way fences constructed | 10.98 " | 6.29 " |
| Public road crossings constructed | 6 | 7 |
| Private road crossings constructed | 4 | 7 |

Field of Oats on the Demonstration Farm at Monteith, Walker Township. South half Lot 12, Con. 2.

A Rural School Fair attracts the kiddies. School Fair held at Earlton.

## ALLEGED ACCIDENTS.

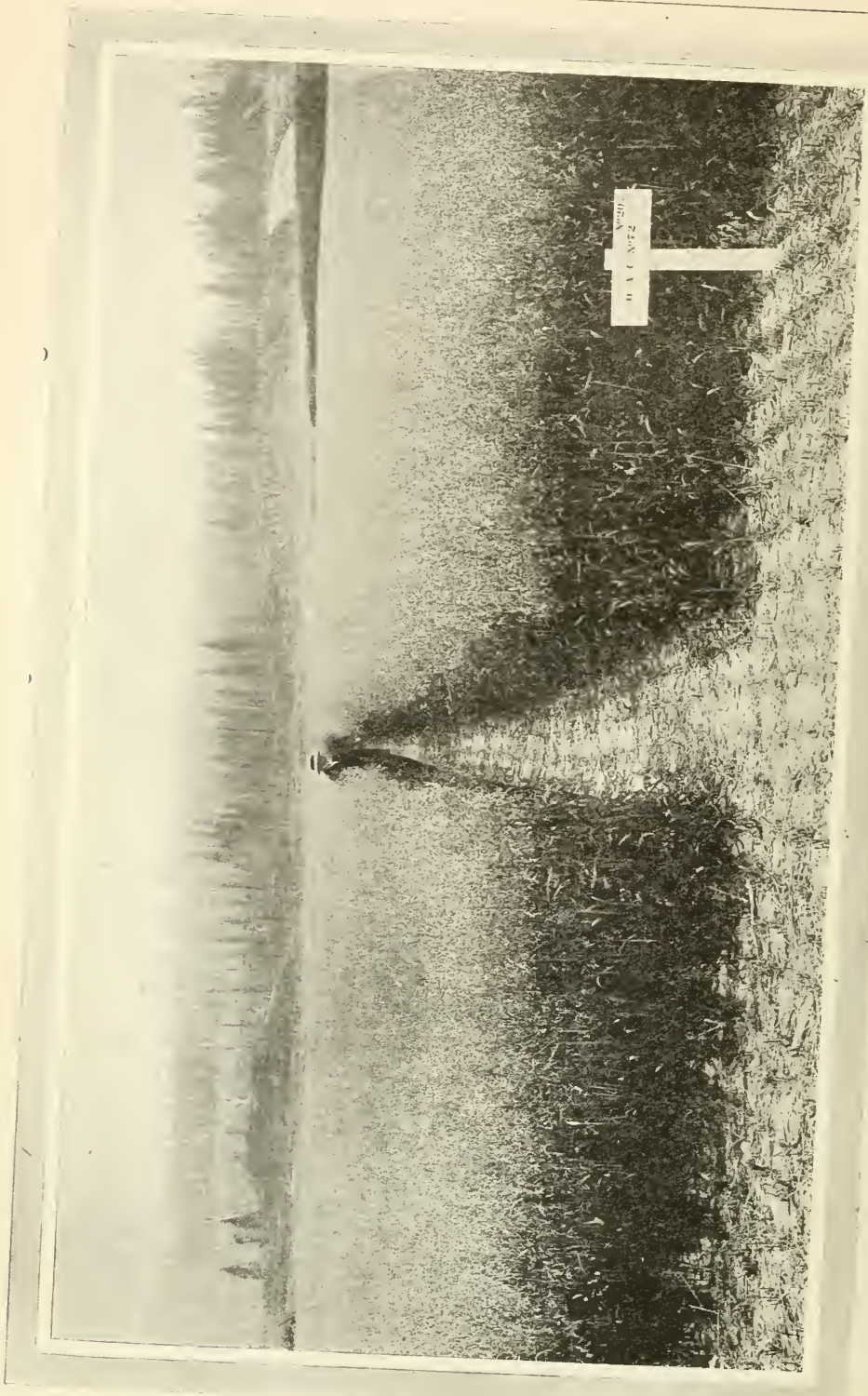
| Date. 1915. | Name of Person Injured. | Nature of Employment. | Place of Accident. | Particulars of work at which employee was engaged at time of accident. | Extent of Injury. |
|---|---|---|---|---|---|
| Nov. 4 | Charles Cadden | Machinist | North Bay | Changing wheels on tender. | Finger sprained. |
| " 5 | Thos. E. Warner | Machinist | North Bay | Stripping engine | Head cut. |
| Dec. 4 | Titus Kecink | Laborer | M.P. No. 2, Charlton Branch | Handling stone | Finger cut. |
| " 6 | John Jenkyn | Car Repairer | North Bay | Handling car wheels | Knee bruised. |
| " 11 | David Leroy | Sectionman | New Liskeard | Pulling spikes from ties | Finger bruised. |
| 1916. | | | | | |
| Jan. 21 | Joseph Desjardine | Car Repairer | North Bay | Replacing car on track with jack | Head cut. |
| " 24 | Wilfred Brosseau | Car Repairer | North Bay | Replacing wheels under car. | Finger cut. |
| " 27 | Gio. Barone | Washerout | North Bay | Working on front end of engine, was struck with sledge by fellow employee. | Eye cut. |
| Feb. 11 | Ernest Berard | Sectionman | Heaslip | Riding over section on hand car | Thumb frozen. |
| Mar. 18 | Albert Slater | Laborer | Cochrane | Coaling engine, opening coal chute | Toe bruised. |
| April 8 | J. Delledonne | Sectionman | Porquis Jct. | Opening gate in coal chutes. | Finger cut. |
| May 12 | Daniel Conway | S. S. Repairer | North Bay | Cutting rivets on ballast plow | Head injured. |
| " 17 | Peter Vahey | Laborer | New Liskeard | Loading ties on flat car | Back injured. |
| " 31 | Arthur Houghton | Section Foreman | Bourkes | Unloading ties from flat car. | Toe bruised. |
| June 12 | John Rathkevitch | Laborer | Englehart | Handling track material | Toe bruised. |
| " 17 | Mike Sernak | Sectionman | Gillies Depot | Riding hand car which became derailed | Right forearm broken. |
| " 17 | A. Hoffman | Section Foreman | Gillies Depot | Riding hand car which became derailed | Legs bruised. |
| " 20 | Giovanni Campanille | Section Foreman | Dane | Removing ties from track; assaulted by fellow employee | Right collar bone broken. |

| | | | | | | |
|---|---|---|---|---|---|---|
| June | 20 | R. Johnston | Cableman | Englehart | Closing car door | Finger bruised. |
| " | 27 | Joseph Stark | Carpenter | North Bay | Dressing piece of wood on planer | First and second fingers of left hand amputated at third joint. |
| July | 2 | Wm. Metcalf | Car Cleaner | North Bay | Washing coach; fell into water and steam box | Ribs bruised. |
| " | 5 | Jno. Brown | Sectionman | New Liskeard | Installing switch | Foot bruised. |
| " | 21 | Frank Cipparone | Blacksmith's Assistant. | North Bay | Lifting engine frame binder from water tank | Foot bruised. |
| " | 29 | J. Syesgorak | Laborer | Nushka | Fighting bush fire | Shoulder and arm burnt. |
| Aug. | 1 | M. Bourgare | Laborer | Latchford | Slipped and fell across rail | Side bruised. |
| " | 3 | C. Celestine | Laborer | M.P. 0.5, Por. Brch. | Driving piles | Right leg broken. |
| " | 7 | W. Riddler | Carpenter | North Bay | Handling timber | Foot crushed. |
| " | 11 | Clifford Hill | Car Repairer | Matheson | Hammer blow glanced from pin | Cheek bruised and nose broken. |
| " | 29 | John McLeod | Carpenter | Cochrane | Melting pitch | Right eye affected. |
| Sept. | 18 | Geo. W. Powles | Machinist | North Bay | Tightening nuts on engine | Thumb smashed. |
| " | 26 | Thos. Steele | Carpenter | North Bay | Purline which he was handling dropped | Left foot bruised. |
| Oct. | 7 | Alfred Smith | Sectionman | Heaslip | Prying out stump with 12' lever | Back hurt. |
| " | 10 | Eurastus Cook | Boilermaker | Heaslip | Drifting an ash pin; piece flew off | Sight of right eye destroyed. |
| " | 24 | M. Nelan | Helper | North Bay | Putting engine on turntable. | Hand cut. |
| " | 26 | Frank Condre | Laborer | North Bay | Unloading material, fell off flat car | Wrist sprained. |

In conclusion, I would take this opportunity of expressing appreciation of the faithful and efficient service rendered by the officers and employees.

Respectfully submitted,

S. B. CLEMENT,
*Chief Engineer and Superintendent of Maintenance.*



Field of Oats, Monteith Government Farm.

## TEMISKAMING AND NORTHERN ONTARIO RAILWAY.

### MOTIVE POWER AND CAR DEPARTMENT.

Annual Report for Year ended October 31st, 1916—Thos. Ross, Master Mechanic.

*New Locomotives*:

In March, 1916, contract was awarded the Canadian Locomotive Company, Kingston, for the construction of six "Mikado" type locomotives, delivery of same to be made in October. Up to the end of October two of these engines have been received, and the following is a general description of same:—

| | |
|---|---|
| Weight on driving wheels, pounds | 197,000 |
| Weight on leading truck, pounds | 29,900 |
| Weight on trailing truck, pounds | 32,000 |
| Weight, total of engine, pounds | 258,900 |
| Weight of tender loaded, pounds | 146,000 |
| Wheel base, driving, feet and inches | 16-6 |
| Wheel base, total of engine, feet and inches | 34-8 |
| Wheel base, total of engine and tender, feet and inches | 63-4¾ |
| Cylinder, diameter and stroke, inches | 25 by 30 |
| Valves, type and diameter, inches | Piston 14 in.* |
| Valve gear, type | Walschaert* |
| Wheels, diameter of driving, inches | 63 |
| Wheels, diameter of truck, inches | 33 |
| Wheels, diameter of trailing, inches | 45 |
| Wheels, diameter of tender, inches | 36 |
| Journals, main driving, diameter and length, inches | 10 by 13 |
| Journals, other driving, diameter and length, inches | 9 by 13 |
| Journals, truck, inches | 6½ by 12 |
| Journals, trailing, inches | 7 by 14 |
| Journals, tender, inches | 5½ by 10 |
| Boiler, type | Extended wagon top |
| Boiler, pressure, pounds | 180 |
| Boiler, outside diameter at front end, inches | 71 |
| Boiler, outside diameter at dome course, inches | 78 |
| Firebox, length inside sheets, inches | 96 |
| Firebox, width inside sheets, inches | 75¼ |
| Tubes, number and diameter, inches | 202-2 |
| Tubes, length, feet and inches | 20-0 |
| Flues, number and diameter, inches | 32-5⅜ |
| Arch tubes, number and diameter, inches | 4-3 |
| Heating surface, firebox, square feet | 208 |
| Heating surface, arch tubes, square feet | 28 |
| Heating surface, tubes and flues, square feet | 3,016 |
| Heating surface, total, square feet | 3,252 |
| Superheating surface, square feet | 757 |
| Grate area, square feet | 50.1 |
| Water, capacity of tender, U. S. gals. | 7,000 |
| Coal, capacity of tender, tons | 12 |
| Maximum tractive power, pounds | 45,500 |
| Factor of adhesion | 4.32 |

*One engine equipped with "Young" valve gear and "Young" piston valves, 12 inches diameter.

Amongst other items the equipment of these locomotives includes the following: Westinghouse E.T. 6 air brake, with 8½ inch, cross compound pump, Pyle National electric headlight equipment type E, Commonwealth Steel Co.'s cast steel rear frame extension and trailing truck, Vanadium steel main frames, these being five inches wide, Vanadium steel springs throughout on engine and tender, Franklin Railway Supply Co.'s No. 8, pneumatic fire doors, Franklin Railway Supply Co.'s power grate shakers, and Franklin Railway Supply Co.'s automatic driving box wedges.

Two of the engines have been equipped with Mudge Slater arrangement on front end and one engine with Oliver Boyer speed recorder.

In the design of these engines, in order to reduce maintenance charges to the minimum, consideration has been given to standardizing as many parts as possible with those of the Consolidation type freight locomotives, which were of about the same tractive power, and which have proven very satisfactory in service.

With the completion of the delivery of the remaining four engines on this contract, the motive power equipment of this railway will be as per the following statement:—

| Wheel Arrangement. | Number. | Average Weight on Driving Wheeels. | Average Tractive Power. |
|---|---|---|---|
| Loo00 | 2 | 56,500 Lbs. | 13,240 Lbs. |
| Loo000 | 29 | 112,270 " | 23,600 " |
| Loo000o | 4 | 133,375 " | 30,400 " |
| Lo0000o | 6 | 197,000 " | 45,500 " |
| Lo0000 | 4 | 182,000 " | 42,600 " |
| L000 | 4 | 123,250 " | 28,160 " |
| | | Weight on drivers. | Tractive Power. |
| Total | 49 | 6,225,330 Lbs. | 1,288,520 Lbs. |

*New Passenger Cars*:

In January, two new steel baggage and express cars and two new first class steel coaches were received. These cars were built by the Pullman Co., and are practically duplicates of the all-steel passenger equipment built at a previous date by the Pullman Company for this Railway.

*Work Equipment*:

In May, eighteen 80,000 lb. capacity Hart cars and one Jordan ballast spreader were received. These are second-hand equipment, purchased through F. H. Hopkins, Montreal, and had been used on the National Transcontinental Railway, but were in very good condition.

*Tank Cars*:

As a further protection against fires along the railway, two additional second-hand tank cars have been purchased and equipped with pumps, hose, and fire tools.

*Electrical Work*:

The electric drives for carpenter and machine shops at North Bay Junction have been completed, as also has the re-wiring of the paint shop and the installa-

tion of electric lights in the new carpenter shop. Electric lights have been installed in new wheel and blacksmith shop and work in connection with complete installation of power and light service is in hand for all new shops at North Bay Junction. Arrangements are also in progress for installation of electric hoist for use in ice house.

The equipments on all steel cars have been thoroughly overhauled, which includes the dismantling, washing and repairing of all cells.

Headlight equipments on locomotives and snow plows have been maintained in good condition, and in the cases of engines undergoing general repairs, the whole electrical equipment has been completely overhauled and repaired.

The work necessary for the upkeep of lights, etc., at the various stations along the lines where electricity is used has been done and arrangements made for the lighting of buildings now being erected or that have been completed.

*Air Brake Equipment*:

During the year the air brake running repairs at all divisional points, and all general repairs and renewals to T. & N. O. and N. C. R. air brake equipment have been carried out in accordance with the recommended practice.

In addition to the above the following work has been executed by the Air Brake Department:—

A train air signal testing rack equal to a locomotive and twelve modern passenger cars has been added to the air brake testing equipment. This will enable us to thoroughly test out and adjust all train air signal equipment before being placed in service.

To eliminate moisture from the compressed air and deposit it in the main reservoir on the locomotive, engines 121, 122, 114, 115, 131, 132, 133, 135, 136, 150, 153, have been equipped with between 35 and 45 ft. of 1¼ in. cooling pipe, located between the compressor and the main reservoir, and the same amount of equalizing pipe has been placed between the main reservoir.

Records obtained during the past winter of engines thus equipped show freezing took place between the compressor and engineer's brake valve, indicating that efforts to apply proper piping to prevent moisture getting into brake pipe was made in the right direction.

Combination car No. 14 has been equipped with L-N brake, high speed beams, and new foundation brake gear. This completes the installation of high speed brake on all passenger equipment.

New foundation brake gear has been applied to cafe cars "Sesekinika" and "Tetapaga," and the air brake equipment has been rearranged to conform to the Commonwealth steel trucks.

New standard foundation brake gear has been installed on engine 121. This will give more track clearance and uniform shoe wear.

The air appliances for operating snow plows and flangers have been overhauled and put in good condition for the coming winter.

The compressed air water distributing equipment on passenger cars has been maintained in satisfactory condition, and all necessary repairs and renewals made as cars pass through shops for general repairs.

The following car brakes have been cleaned, oiled, tested and stencilled:

139 passenger car brakes.
295 freight car brakes.
18 van brakes.
16 miscellaneous car brakes.
115 freight car brakes by T. & N. O. Ry. for foreign lines.
131 T. & N. O. freight car brakes by foreign lines.

A Contented Family of Pigs owned by Mr. A. W. Skinner, Englehart, Ont.

In order to supply sufficient steam to heat long passenger trains, engines Nos. 133, 134, 135, and 136 have been equipped with 1½ in. steam heat throttle and 2 in. regulator. The necessary repairs to steam heat equipment on all locomotives and cars have been made as they pass through the shops for repairs.

All pressure gauges have been tested when necessary and when engines pass through the shops for general repairs. The adjustment of all locomotive safety valves has been maintained at the authorized boiler pressure throughout the year.

*Summary of Extensive Repairs to Locomotives*:

Since November 1st, 1915, the following locomotives have been through our shops at North Bay Junction, for repairs:

Given General Repair:—114, 115, 116, 121, 122, 124, 132, 136, 150, 153.

Given Heavy Repair:—103, 104, 105, 112, 131, and 135.

Given Light Repair:—101, 103, 106, 113, 140. In addition engines 101, 115, 118, 119, 127, 133, 136, 139 and 140 were in the shop at different times during the year for extensive repairs due to accidents.

Note: The term "Heavy Repair" as applied above refers to cases where an engine has received such repairs as driving tyres turned, driving boxes renewed, valves, piston rings and side rod bushings renewed. "General Repair" refers to cases where an engine has been given a thorough overhauling and rebuilt. "Light Repairs" refers to cases where an engine has received minor repairs such as renewal of side rod bushings, piston rings and valve rings.

Each engine has had the boiler washed out once every two weeks when in regular service. Stay bolts in fire boxes have been regularly tested and renewals made when necessary. Nettings and ash pans and dampers have been examined at the end of each trip during the summer as a precaution against fire. During damp weather, and at such times as the danger from this source is reduced to a minimum, ash pans and dampers have been examined twice a week.

*Engine Despatch*:

Statement showing the number of engines despatched from different terminal and divisonal points during the year:—

| Station. | Number of Engines despatched. |
|---|---|
| North Bay Junction | 5,111 |
| Elk Lake | 439 |
| Englehart | 4,941 |
| Iroquois Falls | 344 |
| Timmins | 800 |
| Cochrane | 1,888 |
| Total | 13,523 |

The motive power has been generally assigned during the year as follows:—

| Class of Service. | Number of Engines. |
|---|---|
| Passenger | 13 |
| Freight | 22 |
| Work | 3 |
| Switching | 5 |

*Locomotive Mileage*:

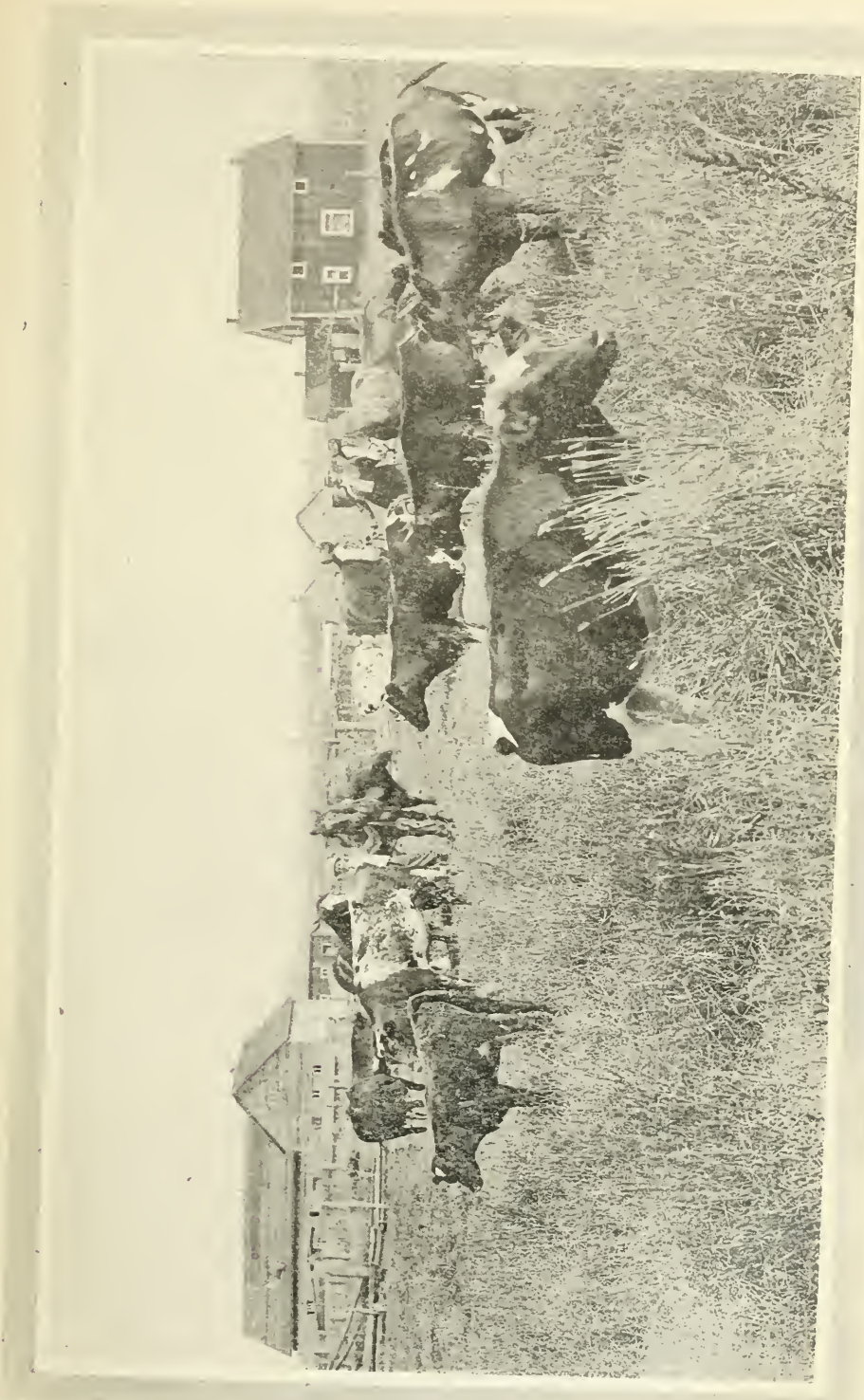
The following statement shows mileage made by locomotives belonging to this railway during the year:—

| Engine No. | Miles Run. |
|---|---|
| 101 | 31,498 |
| 103 | 34,577 |
| 104 | 35,286 |
| 105 | 33,798 |
| 106 | 32,474 |
| 107 | 33,090 |
| 108 | 39,122 |
| 109 | 42,951 |
| 110 | 12,941 |
| 111 | 36,763 |
| 112 | 35,482 |
| 113 | 37,979 |
| 114 | 29,769 |
| 115 | 29,926 |
| 116 | 15,339 |
| 117 | 21,692 |
| 118 | 23,629 |
| 119 | 33,936 |
| 120 | 35,910 |
| 121 | 15,656 |
| 122 | 24,231 |
| 123 | 36,733 |
| 124 | 41,583 |
| 125 | 29,115 |
| 126 | 43,202 |
| 127 | 41,900 |
| 128 | 42,526 |
| 129 | 39,684 |
| 130 | 23,224 |
| 131 | 16,368 |
| 132 | 16,709 |
| 133 | 43,347 |
| 134 | 49,656 |
| 135 | 36,703 |
| 136 | 64,447 |
| 137 | 54,802 |
| 138 | 51,353 |
| 139 | 50,382 |
| 140 | 52,066 |
| 150 | 29,944 |
| 151 | 31,293 |
| 152 | 11,389 |
| 153 | 21,872 |
| | 1,464,347 |

*Repairs to Passenger Equipment*:

Extensive repairs have been made to passenger equipment at North Bay Junction shops as follows:—

| Class of Car. | General Repair. | Light Repair. |
|---|---|---|
| First Class | 3 | 9 |
| Second Class | 1 | 4 |
| Baggage and Express | 1 | 3 |
| Mail and Express | .. | 4 |
| Combination | 1 | 1 |
| Parlor Cafe Cars | .. | 2 |



Healthy Cattle owned by Mr. A. W. Skinner, Englehart, Ont.

The term "General Repair" as applied above refers to cases where a coach has had the interior scraped and sanded, sashes removed and refitted, mouldings removed and replaced in interior of car, seats removed and replaced, outside sheathing stripped off, panels removed, side of coach trussed and replanked, piers strengthened, letter board removed and replaced, vestibule ends reinforced with iron plates, trucks rebuilt, transoms and sills and trimmers renewed, journal boxes and brasses renewed and wheels turned.

The term "Light Repair" refers to coaches having seat arms scraped and sanded, interior of car varnished, outside of car washed down and given two coats of varnish, trucks repaired.

While first class coaches were undergoing general repairs the following alterations and betterments were made to the construction of the cars: Two steel sills applied, two extra wooden sills, new friction buffers and draft gear, vestibule curtains and tail gates. The baggage and express cars were equipped with steel sills, new friction buffers and draft gears.

Parlor cafe cars "Sesekinika" and "Tetapaga" have each been equipped with electric lighting system of the Safety Car Heating and Lighting Company's underframe type with Edison storage batteries. In addition these two cars have also been fitted with Commonwealth steel trucks, which is now the railway company's standard truck for all steel and steel underframe passenger equipment.

About the first of the year private car "Sir James" was put in the shop, thoroughly cleaned down and given a coat of varnish. Outside of this no repairs have been necessary with the exception of the ordinary running repairs. Car "Abitibi" was taken into the shop during July of this year and after receiving a thorough cleaning was re-leaded, hard stopped, sandpapered, colored, lettered and varnished.

*Coach Cleaning*:

Statement showing the number of coaches cleaned at the different stations during the year:—

| Station. | Number of Coaches Cleaned. |
|---|---|
| North Bay Junction | 2,818 |
| Englehart | 972 |
| Cochrane | 2,681 |
| Timmins | 1,390 |
| Elk Lake | 732 |
| Iroquois Falls | 732 |
| Total | 9,325 |

*Repairs to Conductors' Vans*:

During the year six conductors' vans have been put through the shop and have received a thorough overhauling and repair, including repainting of interior and exterior.

*Repairs to Freight and Work Equipment*:

During the past year our staff at North Bay Junction have rebuilt two flat cars, applied new sills to forty-seven flat cars, and have redecked fifty flat cars. In addition to this 574 T. & N. O. freight cars, 2538 T. & N. O. coaches and 21,840 foreign freight cars have been repaired on repair track.

Bills have been rendered against foreign roads for repairs to cars which were repaired under rules adopted by the Master Car Builders' Association. In addition to this monthly bills have been rendered against the Grand Trunk covering the cost of repairs to such cars as are governed by the Grand Trunk running rights agreement at actual cost of labor and material, plus 10 per cent.

Snow plows and snow flangers, wrecking cranes, steam shovels, etc., have been overhauled and given such repairs as were necessary. During the forest fire on July 29th, the "American" railroad ditcher was badly damaged by fire, necessitating the rebuilding of all superstructure on the car and extensive repairs to the ditcher itself. The Ledgerwood rapid unloader which was being used in conjunction with the ditcher at the time of the fire was also badly damaged, the car on which the Ledgerwood was built being completely destroyed.

*Steel Tyres Turned and Wheels Applied Rolling Stock:*

During the year forty pair of driving tyres, one pair of idler wheels, ninety-eight pair of coach wheels, eight pair of new coach tyres, forty pair of tender wheels, twenty-one pair of engine truck wheels and two pair of new engine truck tyres have been turned on wheel lathe at North Bay Junction.

The following tyres were bored out before being applied to wheels: Forty-nine driving wheel tyres, twenty-eight coach wheel tyres, two tender wheel tyres, and fourteen engine truck wheel tyres.

At Englehart 1912 car wheels have been pressed off axles, new wheels bored and remounted on axles.

New wheels have been applied to rolling stock on the T. & N. O. Railway as follows:—

To Locomotives:

| | | | | | |
|---|---|---|---|---|---|
| 7 | pairs | 33" | C.I. wheels on | 3¾ x 7" | axles. |
| 44 | " | " | " | 5 x 9" | " |
| 1 | " | " | " | 5½ x 10" | " |
| 5 | " | Schoen steel tender wheels. | | | |
| 36 | 57"-driving tyres. | | | | |
| 14 | 28" engine truck tyres. | | | | |
| 2 | 69" driving tyres. | | | | |
| 6 | 63" driving tyres. | | | | |

To Passenger Equipment:

| | |
|---|---|
| 28 | 36" steel tyres. |
| 64 | pr. wheels changed and tyres turned. |

To Freight Equipment:

| | | | | | |
|---|---|---|---|---|---|
| 21 | pairs | new 33" | C.I. wheels on | 4¼ x 8" | axles. |
| 2 | " | S.H. | " | 4¼ x 8" | " |
| 1 | " | new | " | 5 x 9" | " |
| 17 | " | new | " | 5½ x 10" | " |

To Ballast Cars:

| | | | | | |
|---|---|---|---|---|---|
| 16 | pairs | new 33" | C.I. wheels on | 4¼ x 8" | axles. |
| 2 | " | S.H. | " | 4¼ x 8" | " |
| 31 | " | new | " | 5 x 9" | " |
| 1 | " | S.H. | " | 5 x 9" | " |

To Van, Work and Other Service Equipment:

| | | | | | |
|---|---|---|---|---|---|
| 17 | pairs | new 33" | C.I. wheels on | 3¾ x 7" | axles. |
| 1 | " | S.H. | " | 3¾ x 7" | " |
| 5 | " | new | " | 4¼ x 8" | " |
| 3 | " | new | " | 5½ x 10" | " |

To Foreign Cars:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 | pairs | new | 33" | C.I. | wheels | on 3¾ x 7" | axles. |
| 5 | " | S.H. | " | " | | 3¾ x 7" | " |
| 1,418 | " | new | " | " | | 4¼ x 8" | " |
| 105 | " | S.H. | " | " | | 4¼ x 8" | " |
| 348 | " | new | " | " | | 5 x 9" | " |
| 16 | " | S.H. | " | " | | 5 x 9" | " |
| 146 | " | new | " | " | | 5½ x 10" | " |
| 6 | " | S.H. | " | " | | 5½ x 10" | " |

*Rolling Stock Destroyed*:

During the destructive fire which swept Northern Ontario during the month of July, 1916, ninety-four cars belonging to foreign roads were burned on the tracks of the T. & N. O. Railway.

In addition to this the following foreign cars were destroyed at different points, along the line: G. T. R. 46935 by wreck at Trout Mills; C. G. R. 19249 by wreck at Latchford; C. G. R. 60550 by wreck at M.P. 212; G.T.R. 61602 and 69081 by wreck at Rabbit Creek Pit; G. T. P. baggage car 422 by fire at Cobalt.

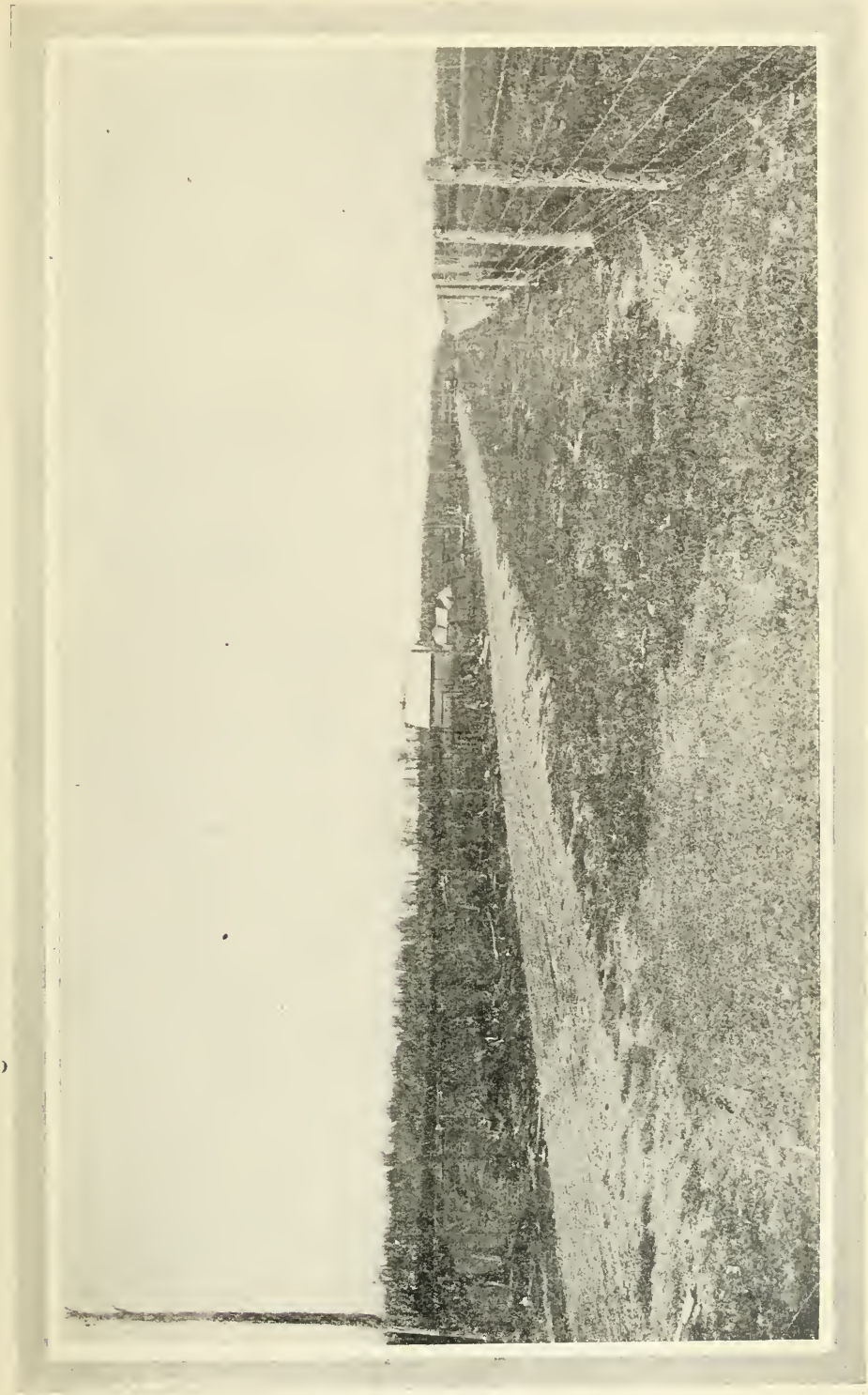
Such trucks and other material from above cars as were in serviceable condition were returned to the owners and balance of cars are being settled for at depreciated value in accordance with regulations laid down by the Master Car Builders' Association.

Of the T. & N. O. freight equipment, ten steel flats and four wooden flats were burned in the fire during July. In addition to this five flat cars and two vans have been destroyed by wreck on our own line, while one stock car, one box car and one flat car have been destroyed on foreign roads. Bills have been rendered against the foreign roads covering depreciated value of cars destroyed on their line, less value of servicable material returned, as per M. C. B. rules.

*Work Turned Out of Carpenter Shop*:

The following miscellaneous articles have been manufactured and turned out of carpenter shop at North Bay Jct., in addition to material for repairs to rolling stock:

2 tables.
3 tables repaired.
2 line posts.
6 section posts.
6 fence posts turned up.
3 filing cabinets.
2 small cabinets for oil samples.
2 stationery cabinets.
1 drawing board.
1 office stool repaired.
1 case for oil lamp.
48 rollers turned up.
1 ledger cabinet.
1 cabinet for time sheets.
1 set pigeon holes.
1 sleigh tongue repaired.
3 correspondence trays.
2 extension boxes.
1 cupboard for machine shop.
1 ice box for Cochrane.
25 office chairs repaired.
2 barrel skids repaired.
29 baggage trucks repaired.
2 new office desks.
4 office desks repaired.
9 conductors' kit boxes.
4 yard limit boards.
6 step ladders.
3 ladders.
15 gang planks.
67 mile boards.
1 picture frame.
1 meter box for ice house.
3 signboards.
2 bulletin boards.
2 wheelbarrows repaired.
150 notice frames.
298 transfer cases.
600 vent plugs for battery boxes.
508 bottom blocks for batter boxes.
770 rungs for ladders.
100 flanger boards.
30 wing boards.
1,000 grade stakes.
1,000 centre stakes.
234 sections cattle guards.
452 slats for repairs to cattle guards.
229,736 track shims.



Newly constructed Road through Dack Township. Farm of Mr. Ed. Wicklun, Brentha, Ont. South half Lot 6, Con. 3, Township Dack.

*Pattern Making*:

During the year there have been ninety-three patterns manufactured at the pattern shop at North Bay Jct., for repairs and renewals of different parts of locomotives, cars, work equipment and shop machinery. All patterns are the property of this Railway and a proper record is kept as to location of same.

*Equipment Owned*:

The Motive Power, Rolling Stock and Equipment of this Railway at present consists of the following:—

39 road locomotives.
4 switching locomotives.
2 private cars.
2 business cars.
14 first-class wooden coaches.
6 first-class steel coaches.
14 second-class wooden coaches.
4 second-class steel coaches.
2 combination wooden second-class and baggage cars.
1 combination wooden first-class and baggage car.
1 exhibition car.
3 parlor cafe cars.
5 wooden baggage and express cars.
4 steel baggage and express cars.
5 wooden mail and express cars.
3 steel mail and express cars.
1 fish car.
20 conductors' vans.
9 stock cars.
145 box cars.
88 steel underframe flat cars.
358 wooden flat cars.
12 steel drop bottom dump cars.
35 Hart convertible cars.
3 snow plows.
3 snow flangers.
3 right hand ballast plows.
3 left hand ballast plows.
3 centre ballast plows.
2 Jordan ballast spreaders.
1 centre ballast spreader.
2 Ledgerwood rapid unloaders.
1 pile driver.
1 American railroad ditcher.
2 steam wrecking cranes.
3 steam shovels.
2 auxiliary boarding cars.
2 auxiliary tool cars.
2 Road Dept. auxiliary tool cars.
2 crane cabin cars.
2 road cabin cars.
1 pile driver tank car.
8 boarding cars.
6 tank cars for fire protection.

*Mechanical Accounting*:

During the month of March, the timekeeping for the mechanical department, which had previously been taken care of in the office of the Chief Engineer and Supt. of Maintenance, was transferred to this office, and a little later arrangements were made for the installation of a cost keeping system, for the purpose of keeping accurate record of the different items of cost of repairs to equipment, etc. This system will prove of great assistance in forming estimates on repair work as well as in the work of supervision, inasmuch as it permits the men in charge to keep in close touch with the cost of the work as it progresses.

Haileybury Dock, September 22, 1915.

Piche Point Wharf, October 15, 1916.

## ANNUAL REPORT TELEGRAPH AND TELEPHONE DEPARTMENT

W. J. KELLY, S. OF T. & T.

During the fiscal year ending October 31st, 1916, both telegraph and telephone business was exceedingly good. In order to handle the increased commercial traffic, extensions were made to existing telegraph and telephone circuits as follows:

Telegraph:

| | Wire miles. |
|---|---|
| No. 8 B.W.G. iron wire—New Liskeard to Timmins | 140 |
| No. 8 B.W.G. iron wire—Englehart to Cochrane | 115 |

Telephone:

| | |
|---|---|
| Metallic Circuit—No. 12 B.W.G. iron wire, Kenney Siding to Temagami | 47 |
| Metallic Circuit—No. 12 B.W.G. iron wire, Gillies Depot to Latchford | 9 |
| Metallic Circuit—No. 12 B.W.G. iron wire, Englehart to Boston Creek | 30 |
| Metallic Circuit—No. 12 B.W.G. iron wire, Matheson to Ramore | 20 |
| Metallic Circuit—No. 12 B.W.G. iron wire, Porquis Junction to Cochrane | 56 |

Owing to increased railway message business between North Bay and Cochrane, due to joint G.T.R., T. & N. O. and C.G.R. traffic, telephone train despatching circuit was simplexed, thereby providing another telegraph circuit without necessitating the stringing of any additional wire.

On January 1st telegraph circuit, North Bay to South Porcupine, was leased to Messrs. Kiely, Smith & Amos, stock brokers, under agreement entered into with that firm, and brokers offices opened at Cobalt and South Porcupine. This was extended to Timmins and office opened at that point on April 1st.

During the year thirty subscriber's telephones were installed and sixteen removed. On July 29th seven telephones were burned, and of these three have been since re-installed.

During the year public toll offices were opened at Kenney Siding, Krugerdorf, Mindoka, and Monteith, for benefit of settlers and mining camps.

Disastrous bush fires of July 29th destroyed approximately three miles of telegraph poles and line; also station telegraph and telephone equipment as well as the town exchange telephone equipment at Matheson.

Fire at Gowganda, August 7th, destroyed telephone office and exchange equipment at that point.

Outside of those occasioned by fires commercial telegraph and telephone lines have been free from serious interruption throughout the year.

General repairs have been made over the entire system and lines maintained in first-class condition.

Day lettergram service was inaugurated on this railway September 1st, giving patrons the opportunity of sending a fifty-word deferred telegram at greatly reduced rate.

The following statement indicates amount of commercial telegraph and telephone business handled:

| | |
|---|---|
| Local messages handled | 34,948 |
| Conjoint messages handled | 74,154 |
| Total | 109,102 |

| | |
|---|---|
| Cable messages sent | 451 |
| Cable messages received | 170 |
| Total | 621 |
| Cable words sent | 7,682 |
| Cable words received | 2,395 |
| Total | 10,077 |
| Telephone calls | 29,434 |

Two hundred and thirty-five telegraph messages were checked free over lines of this railway; account, fire sufferers.

The following is a summary of telegraph and telephone wire in operation at the present time:

| Wire. | Gauge. | Service. | Miles. |
|---|---|---|---|
| Iron | No. 8, B.W.G. | Telegraph | 1,670 |
| Iron | No. 12, B.W.G. | Long Distance Telephone | 167 |
| Iron | No. 12, B.W.G. | Local Exchange and Party Line | 231 |
| Copper | No. 9, B. & S. | Telephone Train Despatching | 574 |
| Copper | No. 10, N.B.S. | Long Distance Telephone | 646 |
| Copper | No. 12, B.& S. | Long Distance Telephone | 218 |
| Style B | Twisted pair | Local Exchange | 40,000 feet. |

| | |
|---|---|
| Total wire mileage | 3,506 |
| Total pole mileage | 341 |

Above respectfully submitted.

W. J. KELLY,

*Supt of Telegraph and Telephone.*

Oats, Farm of Mr. Henry Schafner, Brentha Post Office. North half Lot 1, Con. 1, Dack.

## ANNUAL REPORT OF SUPERINTENDENT OF TRAFFIC

### Year Ended October 31st, 1916.

W. A. GRIFFIN, S. OF T.

Have pleasure in reporting that the fiscal year ended October 31st, 1916, has been the most successful, from traffic standpoint, subsequent to construction of the road, largely due to handling increased traffic to and from Western Canada, via Transcontinental route.

During this period we have been exceptionally free from accidents of serious nature. The only unfortunate occurrence was the fires which passed over the territory adjacent to the T. & N. O. Railway in July and August. Immediately following the fires considerable disorganization occurred handling of traffic. Prompt measures, however, were taken to afford every relief and comfort to fire sufferers, and am thankful to report that practically normal conditions now prevail. In these fires freight shed, Cochrane, station at Kelso and Nushka, and freight shed and station at Matheson were destroyed, together with considerable rolling stock.

Telephone train dispatching (referred to in Annual Report, 1913) is giving every satisfaction.

The Safety First movement, organized March 1st, 1914, for the correction of unsafe conditions and practices, is closely followed up, regular meetings being held monthly.

Necessary time-table changes have been made to meet winter and summer requirements:

Time-table No. 32 made effective November 28th, 1915; time-table No. 33, effective June 25th, 1916. Current time-table No. 34, effective October 8th, shows Trains No. 1 and 2, daily, except Sunday, between North Bay and Cochrane. These trains are equipped with standard C.P.R. sleeper, and inter-line service, via Canadian Pacific Railway to Montreal. Trains No. 46 and 47, daily, except Sunday, between North Bay and Cochrane, with inter-line service, via Grand Trunk Railway to Toronto. These trains are equipped with Pullman cars between North Bay and Cochrane, and parlor-cafe cars between North Bay and Englehart. Trains No. 9 and 10, "The National," tri-weekly, between North Bay and Cochrane, with inter-line service, via Grand Trunk Railway to Toronto, and Canadian Government Railways to Winnipeg. Equipment of these trains consists of Colonist sleeping cars, electric-lighted first-class coaches, Tourist sleeping cars, dining cars, and standard sleeping cars. Dining cars and standard sleeping cars are operated through, without change, between Toronto, Ont., and Winnipeg, Man. Trains No. 50. 51, 52, 53, 54 and 55, daily, except Sunday, between Timmins and Porquis Jct., connecting with main line trains. Trains No. 30, 31, 32 and 33, daily, except Sunday, and Trains No. 34 and 35, Saturdays only, between Iroquois Falls and Porquis Jct., connecting with main line trains. Trains No. 60 and 61, daily except Sunday, and No. 62 and 63, Wednesday only, between Elk Lake and Earlton Jct., connecting with main line trains. Train No. 4, daily, except Saturday and Sunday, Englehart to Cobalt, and Train No. 6, Saturday only, Englehart to Cobalt. Trains No. 23, 24, 25 and 26, daily, except, Sunday, between Englehart and Charlton, connecting with main line trains.

The following derailments and accidents occurred:

1915.

November 2nd, Extra 119, south, passing public road crossing, M.P. 205¾, alleged stuck calf. Owner, W. Monahan, Matheson, Ont.

November 22nd, while Extra 125 east approaching M.P. 36½, Porcupine Sub-Division, alleged struck and killed man named O. P. Taylor, who was walking on track. Railway exonerated from all liability by Coroner's verdict.

November 24th, when Extra 125 west backing into Dome Mines siding, South Porcupine, T. & N. O. 60595 and 100139, loaded with ballast, derailed, due to defective track at this point. Brakeman A. Dorschner, who was riding cars when derailed, jumped, alleged injuring left foot. Resumed duty, Jan. 7th, 1916. Damage to track material account derailment, $28.29.

December 1st, Extra 124 south struck hand car at M.P. 183¾, North Bay subdivision. Slight damage to engine and hand car. Responsible employee disciplined.

December 3rd, while switching at Hollinger Compressor Spur, M.P. 32.5, Porcupine Subdivision, engine 125 derailed. No damage to engine. Damage to track, $5.20.

December 13th, 2nd No. 47 struck hand car at M.P.78¾, damaging same to extent of $12.00. Responsible employee disciplined.

December 14th, while Work Extra 114 north passing South Gillies, cars T. & N. O. 60507 and 100157 derailed. Cause, broken wheel on T. & N. O. 60507. Damage to track and labour repairing, $129.01.

1916.

January 19th, while shed gang, North Bay Jct., transferring car of coal at repair track, foreman Samuel Webber alleged injured foot by stepping on nail in board. Resumed duty January 25th.

January 22nd, while brakeman Frank H. Taylor attempting to get on back of tender, engine 132, while in motion, switching in Cochrane yard, snow on which he was standing gave way, and after dragging for a few feet let go his hold and trailing truck of tender, alleged passed over both legs below the knees. Taken to Lady Minto Hospital, New Liskeard, where he succumbed to alleged injuries January 24th.

February 1st, when fireman J. Yorkton shaking grates on Engine 138 at Thornloe, shaker bar slipped off, alleged injuring little finger. Resumed duty February 23rd.

February 5th, when Train No. 1, Engine 127, pulling out of Latchford Station side-swiped C.G.R. 19249 on Extra 140 south, which was foul of main line on passing track. Damage to C.G.R. 19249, $300.00; engine 127, $90.00. Responsible employee dismissed.

February 6th, while Extra 140 south, passing M.P. 7, North Bay Subdivision, I.R.C. 81366 derailed, account broken truck on car. Damage to equipment, $116.00; damage to track and labour repairing and wrecking, $278.09.

February 7th, while Extra 125 west, coming out of Dome siding, Porcupine Subdivision, pony trucks derailed, travelling three hundred feet, striking Dome Extension siding, derailing engine. Auxiliary sent from Englehart. Damage to engine, $65.00. Cause, snow and ice on track.

February 9th, while Train No. 9, "The National," passing South Gillies, fire broke out in baggage car No. 422. Car was detached from train and taken to Cobalt

where fire extinguished. Damage to car and contents, $5,474.00. Cause of fire unknown.

February 11th, while switching in North Bay Jct. yard, brakeman Charles Caley was alleged jammed between back of tender, engine 150 and van No. 67. Resumed duty February 22nd.

February 19th, Extra 120 south pitched into rear of Extra 118 south, standing at Matheson water tank, completely demolishing van No. 51 and damaging G.T.P. 304021 and G.T.P. 306877. Total damage to equipment, $810.35. Damage to track. $33.40. Responsible employees dismissed.

February 25th, Extra 137 south, passing through Bushnell yard. car G.T.P. 304198 derailed, also derailing G.T.P. 311957, G.T.P. 301508; I.R.C. 62000 and C.G.R. 60485, loaded with grain. Cause, broken arch bar, east side, leading truck, C.G.R. 60485. Estimated damage to G.T.P. 304198, $125.00. No damage to other four cars. Estimated damage to track, labour and material. $85.00.

February 25th, Extra 129 south pitched into rear of Extra 130 south, standing at Kelso Station. Estimated damage to engine 129, $20.00; G.T.R. 4375, $168.00; G.T.R. 9442, $75.00; C.G.R. 35945, $30.00; D.L. & W. 27394, $35.00, and van No. 58, $25.00. Total, $353.00. Damage to track, nil. Responsible employees dismissed.

March 10th while Extra 104 south passing M.P. 104. John Revard attempted to board train, missing footing and alleged fell beneath train, being instantly killed. Body was discovered by train crew on No. 2 same date.

March 16th, while No. 83 passing Gillies Depot, B.R. & P. 4558 derailed, also derailing T. & N. O. flat 60037 (empty). Damage to track, $289.25. Damage to equipment, $300.00. Cause, fallen brake beam on B.R. & P. 4558.

March 16th, while switching G.T.P. diner 4004 and T. & N. O. mail car No. 203, in North Bay Jct. yard, mail car broke loose running into T. & N. O. coaches 36 and 109, damaging same to extent of $60.00. Responsible employees disciplined.

March 22nd, while Extra 114 south switching at pulp spur M.P. 121.5, brakeman Emile Larocque alleged slipped and fell under car, sustaining serious injuries. Taken to Lady Minto Hospital, New Liskeard, where he succumbed to alleged injuries April 6th.

March 23rd, while switching in North Bay Jct. yard, engine 151 with string of cars, side-swiped G.T.R. Extra 1265, entering yard at No. 20 switch, damaging D.L. & W. 27100, $145.00; A.C.R. 1219, $11.00; B. & S. 3260, $13.00; B. & S. 10850, $7.00; W. of A. 980, $45.00 and M.P. 22618, $35.00. Responsible employees disciplined.

April 4th, Extra 138 south passing M.P. 132 struck hand car. No damage to engine. Hand car damaged to extent of $12.00.

April 5th, No. 97, engine 126, struck hand car at Kenogami Lake. Slight damage to car.

April 16th, Extra 113 south, passing Englehart Jct., alleged struck and killed pig. Owner, Alex. Clark, Englehart, Ont.

April 30th, while Extra 108 south passing twelve poles south. M.P. 212, S.F.R.D. 11331, derailed, also derailing following cars: G.T.R. 10430, G.T.P. 312046, I.R.C. 60550, I.R.C. 61880, G.T.P. 306975, P.R.R. 43261, C.P. 211140. C.P. 135880 and G.T.P. 306860. Total damage to equipment. $1,455.00. Damage to track, material, labour, repairing and wrecking. $666.55. Cause of derailment. excessive speed. Responsible employees dismissed.

Full and Contented.

An abundance of pasture provides good grazing, and thus makes Temiskaming an ideal sheep country.

May 5th, Extra 112 north, light, struck hand car at Mindoka. Damage to car, $19.50.

May 11th, while Archibald McGillis calling train crew, bicycle on which he was riding struck telegraph pole, alleged throwing him over handle bars, spraining left fore-arm. Resumed duty May 21st.

May 14th, while Train No. 9, "The National," passing through Kenogami yard, alleged struck horse, breaking its leg. Owner, C. Tomlinson, Kenogami Lake, Ont.

May 26th, steer alleged killed M.P. 208. Train unknown. Owner, D. Johnson, Matheson, Ont.

June 6th, while Extra 134 north passing four poles south, M.P. 231, alleged struck and killed horse. Owner, Ralph L. Malkin, Nellie Lake, Ont.

June 22nd, Extra 117 east passing M.P. 23½, Porcupine subdivision, alleged struck horse, which was so badly injured it had to be shot. Owner, S. Sulzer, Hoyle, Ont.

June 24th, while switching in Englehart yard, yardman G. Perrault, attempting to open knuckle on car, alleged injured fingers, account slack running out. Resumed duty August 15th.

June 24th, while switching in North Bay Jct. yard, yardman W. L. Treacy fell from top of car, alleged spraining left ankle. Resumed duty July 6th.

June 28th, while Train No. 9, "The National," passing M.P. 51, a child passenger, G. Malo, aged two years, fell out of window, alleged breaking right arm and bruising back, forehead and left leg. Child taken through on same train.

July 10th, while Extra 103 north switching at Cobalt, Thomas Finton, employee of the O'Brien Mines, Limited, who was working in car B. & M. 47624, was alleged injured. Railway employee responsible for accident disciplined.

July 11th, while Thomas Beverley, trucker, unloading a large steel plate from truck to car at North Bay Jct. shed, same slipped, alleged bruising second knuckle of left thumb. Resumed duty July 18th.

July 12th, while Mrs. William Richards, passenger, detraining from Passenger Extra 138 south at Heaslip, alleged slipped, injuring toes of left foot.

July 14th, while fireman Herbert M. Drury getting down off engine at Bourkes, slipped, alleged injuring foot. Resumed duty August 24th.

September 1st, while fireman Herbert M. Drury working around engine at Matheson, wrench which he was using slipped, causing him to fall against step of engine, alleged fracturing two ribs. Resumed duty September 23rd.

September 2nd, No. 47, passing M.P. 30¾, North Bay Subdivision, alleged struck and killed cow. Owner, J. P. McDougall, North Bay, Ont.

September 2nd, No. 85, and Extra 130 south, collided head on at M.P. 73.7, derailing I.R.C. 80945, N.Y.O. & W. 13881 and G.T.R. 46265 on Extra 140 south. Estimated damage to equipment, $895.00. Damage to track, $14.10. Responsible employees dismissed.

September 19th, Train No. 47, passing public road crossing, M.P. 131¾, alleged struck and killed cow. Owner, A. Houghton, Heaslip, Ont.

September 25th, while Train No. 10, "The National," passing M.P. 189, G.T.P. express car 6009 derailed. No damage to car. Estimated damage to track and labour repairing, $213.00. Cause, class of equipment and bad spot in track.

September 30th, while Train No. 1 approaching Kelso yard struck a horse, alleged killing same. Owner, C. H. Culver, Goldlands, Ont.

October 9th, while Extra 135 north pulling out of Cassidy Pit, derailed B. & O. 148683. Damage to track and labour rerailing, $62.65. Cause, spread track.

October 11th, Train No. 46, passing M.P. 97¼, alleged killed two young cattle and injured a third. Owner, H. Norton, South Gillies, Ont.

October 12th, while foreman Samuel Webber, handling ice at North Bay Jct. ice-house, floor alleged gave way allowing him to drop through, alleged scraping his left knee and spraining left thigh. Resumed duty Nov. 9th.

October 17th, Train No. 2 passing M.P. 140, alleged struck and killed cow. Owner, Angus Cameron, Englehart, Ont.

October 28th, while Extra 136 south passing M.P. 85, P.R.R. 40823 derailed. Cause, fallen brake beam. Damage to car $8.13. Labour repairing track, $93.50.

October 30th, while trucker Frank Gregoire assisting to lift gang plank, North Bay Jct. shed, same slipped, alleged injuring right foot. Resumed duty Nov. 6th.

October 31st, when 2nd No. 85 passing M.P. 84.13, G.T.P. 340125 and T. & N. O. 60681 derailed. Cause, unknown. Estimated damage to equipment and contents, $455.00. Damage to track material and labour, repairing and wrecking, $166.52.

October 31st, Liberato Di Bartolomeo, trucker, North Bay Jct. shed, engaged trucking large casting from car, same overbalanced on truck, alleged rolling on foot. Resumed duty Nov. 6th, 1916.

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Herewith reports Dr. A. McMurchy, North Bay; Dr. J. S. McCullough, New Liskeard; Dr. R. C. Lowrey, Englehart and Dr. H. H. Moore, Timmins, covering medical attendance.

## REPORT OF DR. A. McMURCHY

I beg to submit my annual report for the year just ended as follows: There have been no accidents involving the loss of life, or causing permanent injury, except one brakeman, who suffered the loss of two fingers. The health of the employees in the offices and on the works has been carefully guarded by the efficient sanitary arrangements made for that purpose, and as a consequence, there have been no cases of communicable diseases among them.

---

## REPORT OF DR. J. S. McCULLOUGH

I beg to submit herewith the medical report for my district for year ended October 31st, 1916:

| | |
|---|---|
| Office consultations with medicine | 305 |
| Town and hospital visits | 318 |
| Line visits | 18 |
| Surgical cases and operations | 14 |

The medical cases treated were all of a minor nature and none serious—all making good recoveries.

*Surgical Cases.*—Regret to report two deaths following accident and operation. One case had both legs amputated, the other had one arm amputated, a fractured elbow and dislocated hip. There were two cases of fractured arms and two of fractured ribs.

In addition to this there were several cases of lacerations, broken fingers and other minor injuries, all of which made good recoveries.

## REPORT OF DR. R. C. LOWREY

I present herewith annual medical report for this district.

*Surgical Cases*:

| | |
|---|---|
| Burns | 1 |
| Injured fingers, requiring amputation | 1 |
| Blood poisoning | 2 |
| Bruised foot | 1 |
| Lacerated fingers | 1 |
| Injury to back | 1 |

*Medical Cases*:

| | |
|---|---|
| Tonsilitis | 5 |
| Otitis Medea | 3 |
| Cystitis | 2 |

There were also a number of minor surgical cases and medical cases including bronchitis, gastritis, dysentery, etc., which I hardly considered necessary to tabulate.

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## REPORT OF DR. H. H. MOORE

I beg to report for the year ended October 31st, 1916, the following cases of accident and sickness among the employees of the T. & N. O. Railway, on that part of the line between Iroquois Falls and Timmins:

| | |
|---|---|
| Boils | 6 |
| Baby illnesses | 12 |
| Bronchitis | 14 |
| Bruised side | 1 |
| Bruised foot | 1 |
| Colds and la grippe | 30 |
| Crushed finger | 1 |
| Chicken pox | 2 |
| Cut cheek | 1 |
| Diarrhoea | 1 |
| Debility | 2 |
| Eczema | 1 |
| Fracture of bones in leg | 1 |
| Gastric disorder | 3 |
| Hernia | 1 |
| Infected glands | 1 |
| Mumps | 1 |
| Otitis Medea | 2 |
| Rheumatism | 5 |
| Sprained back | 5 |
| Scabies | 1 |
| Sprained wrist | 1 |
| Tonsilitis | 4 |

Respectfully submitted,

W. A. GRIFFIN,

*Supt. of Traffic.*

Good crop of Barley on Farm of Mr. Wm. Schell, Englehart.

## GENERAL FREIGHT AND PASSENGER DEPARTMENT

### Year Ended October 31st, 1916.

A. J. PARR, G. F. & P. A.

Comparison of freight tonnage handled and gross freight receipts for the fiscal year ended October 31st, 1916, as against the year previous, shows following result:

| | | | |
|---|---|---|---|
| Tonnage, 1916 | 922,618 | Revenue | $1,331,614 31 |
| Tonnage, 1915 | 676,938 | Revenue | $929,650 99 |
| Increase | 245,680 | Increase | $401,963 32 |

This increase in tonnage and revenue is due to large extent the opening up of the "Transcontinental Route" and large tonnage of east bound grain, as well as general increase both east and west bound of general commodities. There was, however, decrease in tonnage of lumber, forest products, due to disastrous fires which visited Northern Ontario during latter part of July.

Increase is further accounted for by our participating in the through "Transcontinental Route," resulting in increasing the average distance haul per ton from 140.25 miles in 1915 to 188.42 miles in 1916.

The average gross earnings per ton per mile for 1916 was .77 cents, as compared with .98 cents for 1915.

This decrease in per ton per mile earnings is due to the increase in the average distance haul per ton and lower proportionate rate.

The through "Transcontinental Route" comprised of the Grand Trunk Ry., Temiskaming & Northern Ontario Ry., Canadian Government Rys. and Grand Trunk Pacific Ry., continues in popular favour, and traffic has continued to show gratifying increase.

Number of passengers carried and revenue for 1916, as against 1915, shows as follows:

| | | | |
|---|---|---|---|
| Passengers carried, 1916 | 485,759 | Revenue | $624,808 12 |
| Passengers carried, 1915 | 480,995 | Revenue | 482,349 80 |
| Increase | 4,764 | Increase | $142,458 32 |

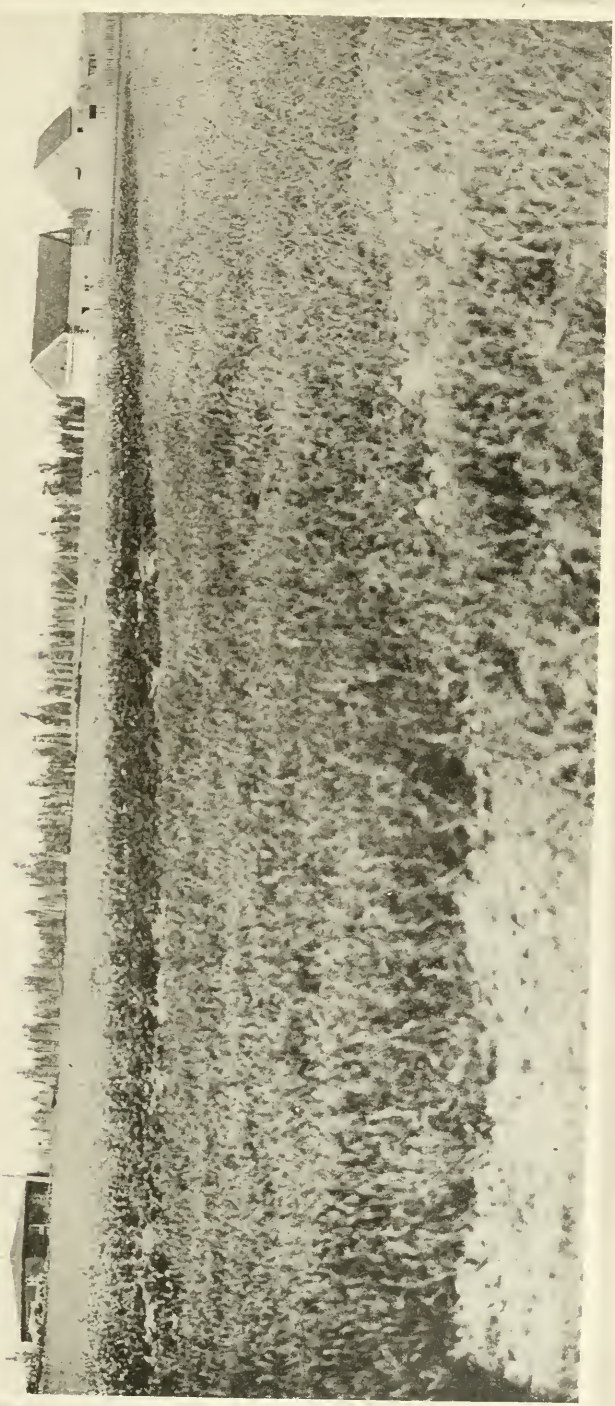
Trains Nos. 9 and 10, known as the "National," operating between Toronto and Winnipeg, have shown such good results as to indicate that it would be advisable at an early date to run the National daily, instead of tri-weekly as at present.

## Temiskaming and Northern Ontario Railway.

### GENERAL FREIGHT AND PASSENGER DEPARTMENT

**Statement of all Baggage, Corpses and Bicycles Handled during the Fiscal Year Ended October 31st, 1916.**

| Station | Baggage | | Corpses | | Bicycles | | Total 1916 | Total 1915 | Increase | Decrease |
|---|---|---|---|---|---|---|---|---|---|---|
| | Forwarded | Received | Forwarded | Received | Forwarded | Received | | | | |
| North Bay | 16,754 | 12,211 | 1 | 38 | ..... | ..... | 29,004 | 25,395 | 3,609 | ..... |
| North Bay Junction | 5,120 | 1,088 | ..... | ..... | ..... | ..... | 6,208 | 4,984 | 1,224 | ..... |
| Widdifield | 145 | 192 | ..... | ..... | ..... | ..... | 337 | 427 | ..... | 90 |
| Tomiko | 192 | 337 | ..... | ..... | ..... | ..... | 529 | 571 | ..... | 42 |
| Diver | 12 | 6 | ..... | ..... | ..... | ..... | 18 | 564 | (Station closed) | 546 |
| Redwater | 70 | 216 | ..... | ..... | ..... | ..... | 286 | Sta. opened | 286 | ..... |
| Temagami | 1,616 | 1,876 | ..... | ..... | ..... | ..... | 3,492 | 3,507 | ..... | 15 |
| Latchford | 609 | 733 | 1 | ..... | ..... | ..... | 1,343 | 1,140 | 203 | ..... |
| Gillies Depot | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 321 | (Station closed) | 321 |
| Cobalt | 8,240 | 7,539 | 8 | 6 | 12 | 10 | 15,815 | 16,473 | ..... | 658 |
| North Cobalt | 831 | 1,018 | ..... | ..... | 3 | ..... | 1,852 | 1,638 | 214 | ..... |
| Haileybury | 8,284 | 6,915 | 10 | 68 | 5 | 3 | 15,285 | 14,709 | 576 | ..... |
| New Liskeard | 4,702 | 4,145 | 10 | 6 | 10 | 5 | 8,878 | 8,943 | ..... | 65 |
| Uno Park | 371 | 478 | 2 | 1 | 2 | 2 | 856 | 715 | 141 | ..... |
| Thornloe | 425 | 450 | 1 | ..... | ..... | ..... | 876 | 729 | 147 | ..... |
| Earlton | 1,411 | 1,101 | 2 | ..... | 2 | 2 | 2,518 | 2,482 | 36 | ..... |
| Elk Lake | 1,021 | 1,133 | 3 | ..... | ..... | ..... | 2,157 | 2,122 | 35 | ..... |
| Heaslip | 244 | 420 | ..... | ..... | ..... | ..... | 664 | 648 | 16 | ..... |
| Englehart | 5,240 | 4,287 | 1 | 2 | 2 | 2 | 9,534 | 7,636 | 1,898 | ..... |
| Charlton | 686 | 816 | ..... | ..... | ..... | 2 | 1,504 | 1,531 | ..... | 27 |
| Dane | 484 | 676 | 1 | ..... | ..... | ..... | 1,161 | 1,263 | ..... | 102 |
| Swastika | 2,002 | 1,935 | ..... | ..... | ..... | ..... | 3,937 | 3,309 | 628 | ..... |
| Matheson | 1,809 | 2,628 | ..... | ..... | ..... | ..... | 4,437 | 3,554 | 883 | ..... |
| Porquis Junction | 2,056 | 2,433 | 11 | ..... | 1 | ..... | 4,501 | 4,293 | 208 | ..... |
| Iroquois Falls | 2,047 | 3,513 | ..... | ..... | ..... | 1 | 5,561 | 4,002 | 1,559 | ..... |
| Porcupine | 358 | 722 | ..... | ..... | ..... | 2 | 1,082 | 1,239 | ..... | 157 |
| South Porcupine | 3,512 | 3,731 | 4 | ..... | 10 | 13 | 7,270 | 6,416 | 854 | ..... |
| Schumacher | 856 | 984 | 2 | 3 | ..... | 5 | 1,850 | 1,407 | 443 | ..... |
| Timmins | 5,479 | 6,250 | 3 | ..... | 1 | 6 | 11,739 | 9,058 | 2,681 | ..... |
| Cochrane | 6,068 | 6,546 | 1 | ..... | 4 | 3 | 12,622 | 12,128 | 494 | ..... |
| Total Year, 1915-1916 | 80,644 | 74,379 | 61 | 124 | 52 | 56 | 155,316 | 141,204 | 16,135 | 2,023 |
| " " 1914-1915 | 73,992 | 66,984 | 74 | 53 | 51 | 50 | 141,204 | ..... | ..... | ..... |
| Increase | 6,652 | 7,395 | ..... | 71 | 1 | 6 | 14,112 | ..... | 14,112 | ..... |
| Decrease | ..... | ..... | 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |



Clover and Potatoes on Farm of Mr. Wm. Nelson. North half Lot 4, Con. 3, Evanturel.

## Statement of Baggage Claims.

RECEIVED, PAID, UNDER INVESTIGATION, Etc.

Number of Claims 32. Amount $6,174 01

| | | | | | |
|---|---|---|---|---|---|
| Number of Claims Vouchered ..... | 24 | Amount Claimed | $5,444 46 | Vouchers for | $2,387 10 |
| " " Declined ..... | 5 | " " | 52 50 | | |
| " " Under Investiga'n | 3 | " " | 677 05 | | |
| | | | $6,174 01 | | |

### Credits

| | |
|---|---|
| Insurance against Fire claims paid ..... | $2,342 00 |
| Other Credits Nil. | |
| (Year 1915-16) Net Debit ..... | $45 10 |

## Analysis of Baggage Claims—Year 1915-1916

| —— | No. | Paid | Pending | Declined | Remarks |
|---|---|---|---|---|---|
| Claims resulting from Baggage Car burning Train No. 9, Feb. 9th 1916 | 21 | 20 | 1 | ..... | J. Spence claim $108.00 waiting surrender duplicate cheque. See detailed list appended. |
| Claims presented, account alleged loss by fire Matheson Station July 29th, 1916. | 2 | ..... | 2 | ..... | Under investigation. |
| Miscellaneous Claims ..... | 9 | 4 | ..... | 5 | Four Claims paid $45.10. Five declined $52.50. |
| | 32 | 24 | 3 | 5 | |

## Temiskaming and Northern Ontario Railway

### GENERAL FREIGHT AND PASSENGER DEPARTMENT

Statement of Claims Received and Vouchered, Account Fire G.T.P. Baggage Car No. 422, Train No. 9, Feby. 9th, 1916

| Claim No. | Claimant | Address | Claimed Amount | Voucher No. | Date | Vouchered Amount |
|---|---|---|---|---|---|---|
| | | | $ c. | | | $ c. |
| 11082 | Forbes Hendry | Enid, Sask | 59 50 | 9532 | April 18, 1916 | 59 60 |
| 11140 | Henri Cusson | Winnipeg, Man | 260 20 | 9544 | " 19, 1916 | 100 00 |
| 11141 | Mrs. A. Brotherston | " " | 310 45 | 9543 | " " | 100 00 |
| 11142 | Clinton Bradbury | Bradwell, Sask | 77 30 | 9542 | " " | 77 30 |
| 11259 | Rodger McIntosh | Seamans " | 102 50 | 9579 | " " | 100 00 |
| 11269 | R. H. Slipp | Trochu, Alta | 223 50 | 9603 | May 2, 1916 | 100 00 |
| 11383 | Ben. S. English | Caron, Sask | 261 00 | 9610 | " 5, " | 100 00 |
| 11427 | Mr. and Mrs. J. N. Walton | Keystone, Sask | 400 60 | 9639 | " 23, " | 200 00 |
| 11428 | Mrs. John Ross | Kelliher " | 135 76 | 9638 | " " | 100 00 |
| 11458 | H. A. Jackson | Edmonton, Alta | 1,091 31 | 9640 | " " | 300 00 |
| " | Mrs. A. L. Jackson | | | | | |
| " | Miss Phyllis Logan | | | | | |
| 11468 | Mrs. Herbert Bissell | Gilpin, Alta | 156 85 | 9642 | " " | 100 00 |
| 11470 | Miss Anna Hall | " " | 151 40 | 9641 | " " | 100 00 |
| 11491 | W. N. Botsford | Winnipeg, Man | 232 45 | 9634 | " " | 100 00 |
| 11505 | Miss A. C. Leckie | Edmonton, Alta | 333 70 | 9636 | " " | 100 00 |
| 11520 | T. Offen | Rivers, Man | 167 00 | 9672 | " " | 100 00 |
| 11539 | Wm. G. Cook | Yellowgrass, Sask | 174 50 | 9673 | " " | 100 00 |
| 11588 | Mark Spence | Winnipeg, Man | 627 05 | 9677 | June 5, " | 100 00 |
| 11731 | H. S. Price | " " | 438 00 | 9751 | " 26, " | 100 00 |
| 11896 | Lieut. H. A. McDougal | Camp Borden, Ont | 129 40 | 9846 | July 24, " | 100 00 |
| 12155 | Albert Moran | Asquith, Sask | 340 55 | 9858 | Aug. 4, " | |
| | | | | 10280 | Oct. 13, " | 205 10 |
| | | | 5,386 86 | | | 2,342 00 |

Potatoes on Farm of R. Heaslip. South half Lot 6, Con. 4, Evanturel.

## OFFICE OF THE COMMISSIONER

### Year Ending October 31st. 1916.

GEO. W. LEE, COMMISSIONER.

The financial year of the Temiskaming and Northern Ontario Railway, ending the 31st day of October, 1916, has been more eventful than any other in the history of the Railway and the territory which it serves.

The beginning of this past year saw the first of the large paper shipments that have been, and are being made, out of the district, from the paper mills at Iroquois Falls, owned and controlled by the Abitibi Pulp and Paper Company. They have four of the largest paper machines in the world in operation there making news print. They are now enlarging their plant so that they will be doubling their capacity in the near future.

The winter of 1915-16 saw the first of the grain haul over our line. Millions of bushels of wheat from the West (on its way to market) were handled. Large shipments of oats and other cereals were also hauled.

During the past year there has been a great increase in the shipments of forest products—logs, lumber, poles, piles, posts, pulp, pulpwood, stove-wood, mine props, *et al*—and, as a result, our box and flat cars have been taxed to the limit.

The mines have never been so busy, the output never so large or so valuable, as during the past year. Silver, gold, copper and nickel have all been in very active demand and the prices the best ever known. The territory served by the Temiskaming and Northern Ontario Railway being such a source of supply that large and valuable shipments of ore and bullion have been made, enriching those interested in the district as well as the great nation of which we form so important a part.

From an agricultural point of view our district was more favoured this season than almost any other part of Canada, with the result that we had, in the Temiskaming District, a good average crop of hay, grass seeds, potatoes and vegetables. We did not have the excessive spring rains that they had in Old Ontario and which prevented seeding there, instead, we had a moderate rainfall. The excessive drouth that followed the wet spring in Old Ontario, affecting their spring crops and pasturage, did not affect us. Ample growth of grain crops and meadows continued all season, with the result that pasturage was never better. In the Temiskaming District the fall wheat crop was splendid, hay was never better, grass seeds never so good, potatoes, a good average and better by far than almost any other part of Canada, equal in yield to New Brunswick or British Columbia, and of a superior quality to any, no matter where from.

While the crops did not suffer from drouth still it was dry enough to make large areas of timbered bush in danger of fire. During the haying season, which is generally the end of July, many fires were out and with the high winds that prevailed at this season they spread rapidly until the 29th day of July, when the most unfortunate and regrettable event in our history took place; the great and regrettable loss of life (Cochrane to near New Liskeard) together with the large loss of property—buildings, stock, implements and utensils.

After the fire all that was possible was done to alleviate the loss and sufferings of the survivors. The public, Provincial and Dominion Governments and the Temiskaming and Northern Ontario Ry. came with instant relief to those affected so that none suffered very much from lack of food or clothing. Since the fire nearly all those who were burned out have been re-instated to their farms and holdings.

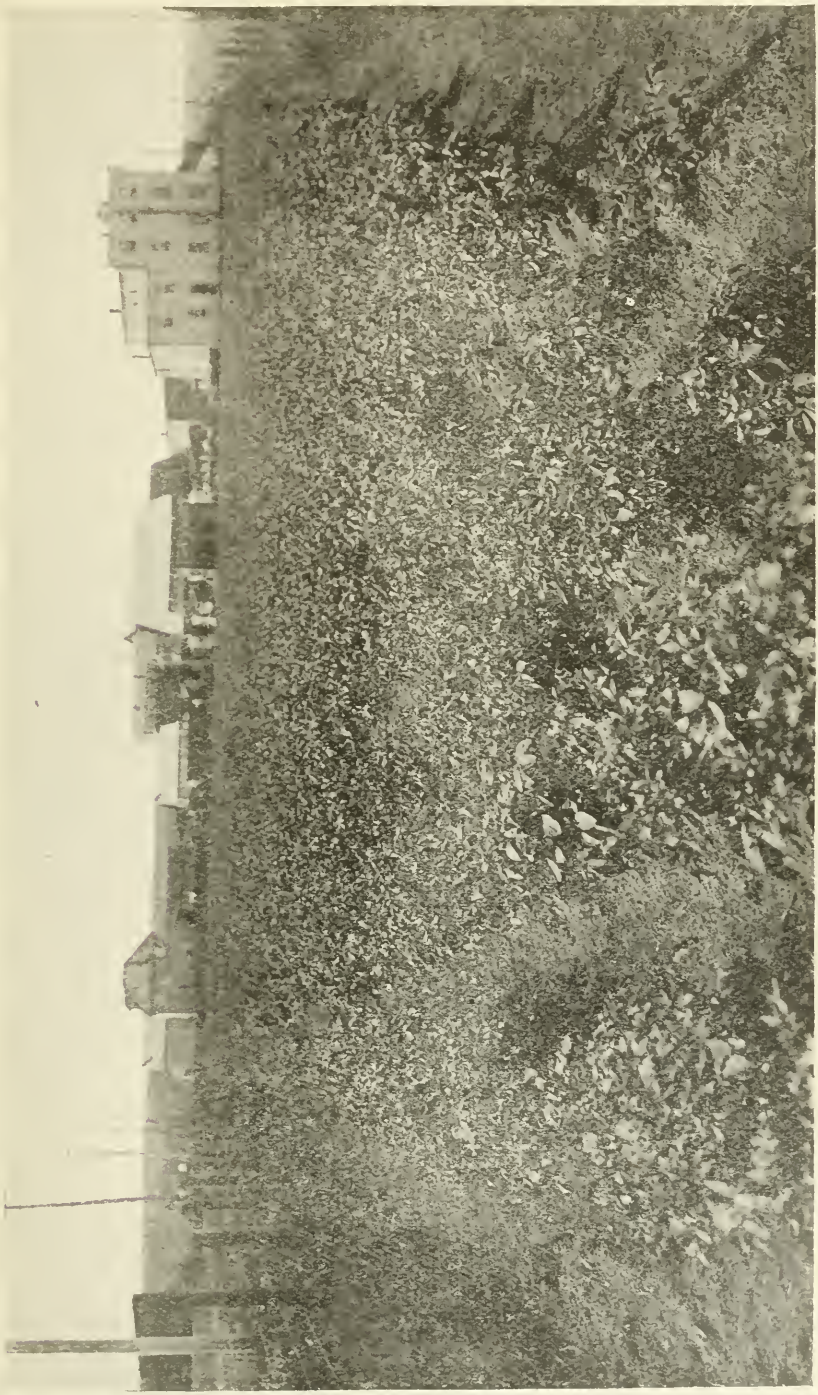
While we may, and do, deeply deplore the loss of life, the fire, nevertheless, has left a very large territory ready for clearing and at much less cost per acre than before the occurrence. In a few years all the burnt section should be planted and in growing condition and this will be much sooner than it could have been. So, while we suffered greatly it was not without compensation.

Labour has been in great demand during the entire year. Wages have ranged high in order to carry on the industries of the district. Many men have been brought in "under contract" and many more could find remunerative employment.

The enlistments for service overseas have been very large. In some settlements all the eligible men have enlisted and some of them have made the supreme sacrifice, others have suffered injury. Dependent relatives of the soldiers have been well looked after by the various societies that have been organized throughout the district for that purpose.

In common with the rest of Canada we are going through the trials resulting from the war. With increased prosperity there never was a time in our history when we were better off. While the cost of living has increased so has our ability to meet its increases. None should want for the necessaries—few do want for them—many share in the luxuries. All are prosperous and confident for the future.

In all we have had an excellent year and one that the country served by the Temiskaming and Northern Ontario Railway is proud of. All that is required is faith and work combined and the country's future is assured.



Potatoes grown at Englehart, Ont.

# Preliminary report on the Mining Industry in that part of Northern Ontario served by the Temiskaming and Northern Ontario Railway, Calendar year 1916

By ARTHUR A. COLE, Mining Engineer.

The mining industry in the Temiskaming district has had another prosperous year. Combined productions of gold and silver will have a gross value this year of twenty-two and a half million dollars. This is an increase of two and a half million dollars over gross value for 1915.

In the gold camps increased activity is very noticeable among the producing mines, and a considerable increase in milling capacity is planned for the near future.

Many promising but unproven prospects are now being opened up. All this development is being made, notwithstanding the increasing prices of supplies and the shortage of skilled labour, which is directly due to the large number of men recruited into the Canadian army for overseas service. Much of the capital available for development now going on is directly traceable to the United States.

In the Cobalt camp the natural falling off in the production of silver due to the gradual depletion of the mines is more than offset this year by the increase in the price of silver. Prospecting has been stimulated and a number of old producers that have been closed down for several years have been re-opened, and once more appear in the list of shippers.

## GOLD.

The statistics of Ontario's gold production for the first nine months of the calendar year, issued by the Ontario Bureau of Mines, show a steady increase over previous years. As in 1915 most of the production this year came from Porcupine, but Kirkland Lake and Munroe district also assisted.

GOLD PRODUCTION IN ONTARIO DURING 9 MONTHS ENDING SEPTEMBER 30TH, 1916.

| | Ounces. | Value. |
|---|---|---|
| First quarter | 107,818 | $2,210,269 00 |
| Second quarter | 127,242 | 2,612,471 00 |
| Third quarter | 127,895 | 2,690,994 00 |
| Total for 9 months | 363,955 | $7,513,734 00 |

*Porcupine*:

During 1916 the following mines produced gold in the Porcupine district:

Hollinger.
Dome.
McIntyre.
Porcupine Crown.
Vipond.
Schumacher.
Dome Lake.

The gold production of the Porcupine camp to the end of the calendar year 1916 is shown in the following table:

PORCUPINE GOLD PRODUCTION, 1910-1916.

| Year. | Ounces. | Value. |
|---|---|---|
| 1910 | 1,947 | $35,539 00 |
| 1911 | 765 | 15,437 00 |
| 1912 | 83,725 | 1,730,628 00 |
| 1913 | 207,748 | 4,294,113 00 |
| 1914 | 251,131 | 5,190,794 00 |
| 1915 | 362,186 | 7,480,901 00 |
| 1916 (estimated) | | 9,000,000 00 |
| | | $27,747,412 00 |

During month of June a merger was completed of the Hollinger Gold Mines, Limited, Acme Gold Mines, Limited, and Millerton Gold Mines, Limited, along with claim 13147 and the plant of the Canadian Mining and Finance Company, Limited. This aggregation is now known as the Hollinger Consolidated Gold Mines, Limited.

The capital of the new company is $25,000,000, and the dividend that is being paid every four weeks is $240,000.

The mill which has a crushing capacity equivalent to 120 stamps handles over 50,000 tons during a four-weekly period. A 100-stamp extension to the mill is now under construction and is expected to be in operation by next spring.

An amalgamation is also being arranged between the North Thompson and the Porcupine Vipond Mines, and this is likely to be consummated by the end of the year.

Besides considerable addition to the ore reserves of the two larger properties the Hollinger and the Dome, the year has been noteworthy on account of the important ore bodies located on the 1,000 ft. level of the McIntyre Extension, the 100 ft. level of the Schumacher, and between the 7th and 9th levels of the Porcupine Crown, in all cases adding materially to the value of the mines.

*Munroe Township*:

The Croesus mine was the only producer in this district during the year. On the 29th July, a devastating forest fire swept the district with large loss of life. Besides losing a number of men, all buildings and equipment of this mine were burned and destroyed. Reconstruction was at once started and is now nearing completion.

*Bourkes*:

Two or three promising gold finds have been located in the vicinity of Bourkes Station and farther east to the north of Wolf Lake.

*Sesekinika*:

Very little development has been done in this vicinity. A valuable find was reported on the Sullivan claim.

*Kirkland Lake*:

The year has been a very active one in this district. The only producer has been the Tough Oakes mine which has operated continuously. It is proposed to double the capacity of the mill in 1917.

The Northern Ontario Light and Power Company is running a power line into the district from Cobalt, a distance of 64 miles. It is expected that power will be available about the first of February, 1917.

On the Teck-Hughes the mill is ready to start as soon as power is received. Mills are also to be erected in 1917 on the Lake Shore and Kirkland Lake mines (Beaver).

*Goodfish Lake*:

Development at the La Belle Kirkland mine was considered satisfactory and a mill is now contemplated.

*Boston Creek*:

A number of promising prospects bid fair to become producers in the near future.

*Kowkash and Tashota*:

East of Lake Nipigon on the National Transcontinental Railway development is proceeding on several gold claims. The principal operating company is the Tash-Orn which has erected a plant on a promising find on the Wells claim near Tashota. This company is also developing the King-Dodds claim near Kowkash, the original find in the district.

## SILVER.

The silver production of Ontario is made up for the most part by the mines in the Cobalt district, the small remaining portion is recovered in the gold mills, but this only amounts to .4 per cent. of the whole.

The official returns for nine months of the year are as follows:

SILVER PRODUCTION IN ONTARIO DURING 9 MONTHS ENDING SEPTEMBER 30TH, 1916.

| Period 1915. | Ounces. | Value. |
|---|---|---|
| First quarter | 5,297,831 | $3,187,699 00 |
| Second quarter | 4,969,912 | 3,009,570 00 |
| Third quarter | 5,935,348 | 3,561,771 00 |
| | 16,203,091 | $9,750,040 00 |

The year 1915 closed with the price of silver gradually rising. Until May the average price per month showed 25 per cent. rise over the average price for 1915. During June and July a partial drop back took place but since that time the increase has been steady and the average price for December will likely be the highest for the year.

The monthly average price of silver in New York and London during the calendar year 1915 and eleven months of 1916 has been as follows:

| Month. | 1915. | | 1916. | |
|---|---|---|---|---|
| | New York. | London. | New York. | London. |
| January | 48.855 | 22.731 | 56.775 | 26.960 |
| February | 48.477 | 22.753 | 56.755 | 26.975 |
| March | 50.241 | 23.708 | 57.935 | 27.597 |
| April | 50.250 | 23.709 | 64.415 | 30.662 |
| May | 49.915 | 23.570 | 74.269 | 35.477 |
| June | 49.034 | 23.267 | 65.024 | 31.060 |
| July | 47.519 | 22.597 | 62.940 | 30.000 |
| August | 47.163 | 22.780 | 66.083 | 31.498 |
| September | 48.680 | 23.591 | 68.515 | 32.584 |
| October | 49.385 | 23.925 | 67.855 | 32.361 |
| November | 51.714 | 25.094 | 71.604 | 34,192 |
| December | 54.971 | 26.373 | 75,765 | 36,410 |
| | 49.684 | 23.675 | 65,661 | 31,315 |

The lowest price for year was 55.875 on January 3rd, 1916, and the average price for eleven months of 1916 was 67.147. The year closes with the price of silver higher than at any other time in the history of the Cobalt camp.

The highest point in the silver production of the Cobalt mines was reached in the year 1911, and from that time on we must expect a gradually decreasing production owing to the depletion of the mines. This year will show a falling off in production of about one million ounces. The rise in price of silver not only offsets this decrease but makes the value of the 1916 production nearly two million dollars higher than that of 1915.

The silver production of the Cobalt camp is shown in the following table:—

| Year. | Ounces. | Value. |
|---|---|---|
| 1904 | 206,875 | $111,887 |
| 1905 | 2,451,356 | 1,360,503 |
| 1906 | 5,401,766 | 3,667,551 |
| 1907 | 10,023,311 | 6,155,391 |
| 1908 | 19,437,875 | 9,133,378 |
| 1909 | 25,897,825 | 12,461,576 |
| 1910 | 30,645,181 | 15,478,047 |
| 1911 | 31,507,791 | 15,953,847 |
| 1912 | 30,243,859 | 17,408,935 |
| 1913 | 29,681,975 | 16,553,981 |
| 1914 | 25,162,841 | 12,765,461 |
| 1915 | 23,730,839 | 11,742,463 |
| 1916 (Estimated) | 21,500,000 | 13,500,000 |
| | 255,891,494 | 136,293,020 |

The adoption of flotation in a number of mills in Cobalt is having a beneficial effect in bettering the extraction and also in making some of the former tailings dumps profitable to re-treat.

## Smelting and Refining.

In the early days of the Cobalt camp all shipments of ore had to go out of the country for treatment, most of it going to the United States. Soon Canadian smelters were started which treated high grade ore, and the latest development has been the building of the so-called High Grade Mills at Cobalt, which produce silver bullion by a combination amalgamation-cyanide process.

An examination of the figures for the calendar years 1914 and 1915 shows that the percentage of silver bullion produced from Cobalt ores was in round numbers:

| | 1914. Per cent. | 1915. Per cent. |
|---|---|---|
| Cobalt Mills Amalgamation and Cyanide | 44 | 39 |
| Southern Ontario Smelters | 39 | 45 |
| United States Smelters | 17 | 16 |
| | 100 | 100 |

The sixteen per cent. still going to the United States consists of some high grade ore along with all the low grade material both ore and concentrates shipped, as the Canadian smelters are not equipped to handle this low grade material.

Ville Marie Dock, May 21, 1914.

Ville Marie Dock, October 21, 1915.

In the high grade mills at Cobalt the silver only is recovered, the cobalt, nickel and arsenic being left in the residue for future treatment or sold for the cobalt content. The Deloro and Coniagas smelters are equipped with complete refineries so that besides producing silver bullion they also produce and market arsenic, cobalt and nickel.

The cobalt and nickel have been produced mostly as oxides, but as there has recently been a call for the metals they are now also produced in that form.

The output of the Coniagas and Deloro Smelters up to 31st December, 1915, is as follows:

| Smelters. | Ore Treated. | Silver—Fine. | Cobalt Oxide. | Nickel Oxide. | White Arsenic. |
|---|---|---|---|---|---|
| | Tons. | Oz. | Tons. | Tons. | Tons. |
| Coniagas | 15,520.80 | 28,388,652 | 731 | 423 | 3,265 |
| Deloro | 22,231. | 38,327,154 | 1,246 | | 6,840 |

HIGH GRADE MILLS, COBALT.

Silver Bullion Production.

| Year. | Nipissing. | Buffalo. | Total. |
|---|---|---|---|
| | Ozs. | Ozs. | Ozs. |
| 1911 | 2,361,845 | ..... | 2,361,845 |
| 1912 | 4,244,948 | 205,302 | 4,450,250 |
| 1913 | 4,838,215 | 1,688,763 | 6,526,978 |
| 1914 | 4,454,180 | 930,531 | 5,384,711 |
| 1915 | 3,764,394 | 751,054 | 4,515,446 |
| Total | 19,663,582 | 3,575,650 | 23,239,230 |

Other mills which have adopted cyanide treatment either totally or in part and are now shipping silver bullion are:

Cobalt Reduction Company.
Dominion Reduction Company.
O'Brien Mill.

## Operating Expenditure.

The gross value of the silver ore shipments for 1915 to the mining companies was $11,703,966. Deduct dividends paid 1915 $4,532,414—$7,171,552.

On the assumption that cash surpluses remained the same at the end of the year as at the beginning it thus costs $7,000,000 to run the producing mines of Cobalt one year. Of this amount we may assume that two-fifths was paid for supplies, or $2,800,000.

The following table gives operating expenditure for thirteen producing mines for 1915:

| Mine. | Labour. | Supplies. | Total. |
|---|---|---|---|
| | $ | $ | $ |
| Beaver | 133,317 | 88,878 | 222,195 |
| Buffalo | 159,723 | 106,482 | 266,205 |
| Coniagas | 212,869 | 141,914 | 354,783 |
| Crown Reserve | 177,591 | 118,394 | 295,985 |
| Kerr Lake | 214,346 | 142,898 | 357,244 |
| La Rose | 215,541 | 143,694 | 359,235 |
| McKinley-Darragh | 190,830 | 127,222 | 318,052 |
| Mining Corporation | 809,724 | 539,817 | 1,349,541 |
| Nipissing | 468,497 | 312,331 | 780,828 |
| O'Brien | 201,600 | 134,400 | 336,000 |
| Penn Canadian | 125,244 | 83,496 | 208,740 |
| Seneca Superior | 53,935 | 35,957 | 89,892 |
| Temiskaming | 157,483 | 104,988 | 262,471 |
| Total | 3,120,700 | 2,080,470 | 5,201,170 |

In the above table an arbitrary division of the total is made into three-fifths for labour and two-fifths for supplies.

Some of the supplies used are given herewith showing quantity, value and origin.

*Pebbles.*

Cobalt and Porcupine combined use $40,000 per annum; all imported from Europe, mostly from France. Newfoundland formerly had part of this market but lost it through shipments of poor material.

*Cyanide.*

Cobalt and Porcupine combined use $574.000 per annum. Of this $400,000 comes from the Cassels Cyanide Company of Glasgow, and the remainder has been supplied by a German firm in the United States.

*Zinc.*

Cobalt and Porcupine combined use 200 tons, value $80,000. This mostly comes from Japan at present, but soon it will be supplied from the United States.

*Powder.*

Cobalt uses 900 tons per annum, value $450,000, while Porcupine takes an additional 1,650 tons, and other smaller camps a further 80 tons. All this is manufactured in Canada.

*Fuse.*

Cobalt uses 3,700,000 feet per annum valued at $17,000. Porcupine takes 7,000,000 feet. 56 per cent. is of British and 44 per cent. of United States manufacture. No fuse is made in Canada.

*Drill Steel.*

Eighty thousand dollars for Cobalt and Porcupine. Formerly this was supplied equally by England and the United States, but now England cannot supply it.

*Detonators.*

Cobalt uses 740,000, value $22,200. They are now manufactured at Brownsburg, Canada.

*Oils.*

Lubricating oils, etc., $40,000 per annum is used by Cobalt and Porcupine. All are American oils, but 30 per cent. is refined in Canada.

*Casey Township:*

Production proceeded at the Casey mine as usual, until the district was swept by fire on 22nd August, when all buildings and equipment were lost. At the end of the year the new plant is nearing completion.

*Gowganda:*

Interest in this district has been revived to a certain extent by an important find made on the Miller-Lake-O'Brien mine. This find was made on the 300 and 350 ft. levels and is one of the best discoveries ever made in the Temiskaming district. This mine has shipped regularly during the year and a small shipment was also made by the Reeves-Dobie.

*South Lorraine:*

Several companies operated during the year and the Wetlaufer and Bellellen made shipments.

## NICKEL.

The Alexo mine situated three miles from Porquis Junction on the Porcupine branch of the Temiskaming and Northern Ontario Railway, continued to ship nickel ore during the year to the Mond Nickel Company's smelter at Coniston, Ontario. A statement of shipments for eleven months of 1916 is given herewith:

NICKEL ORE SHIPMENTS OVER T. & N. O. RY., 1916.

| | Tons. |
|---|---|
| January | 1,227.60 |
| February | 1,026.55 |
| March | 1,041.45 |
| April | 699.75 |
| May | 959.13 |
| June | 848.35 |
| July | 671.15 |
| August | 672.15 |
| September | 384.65 |
| October | 237.00 |
| November | 332.65 |
| December | 347.00 |
| | 8,447.43 |

## COPPER.

About four miles north of Temagami station near Cedar Lake, a chalcopyrite prospect was opened up and a test carload of ore was shipped to a United States smelter. The property has since been taken over by M. J. O'Brien and more extensive work is now being planned.

A part of the Rahn Company's Apiary, between New Liskeard and Haileybury.

An Apiary Demonstration. Bees and Clover actually go together. Temiskaming can produce more and better clover than any other part of the province; therefore, it is ideal for Bees.

## ZINC AND LEAD.

The Dan Smith zinc-lead property is situated to the south-east of Wolf Lake. It is now under working option to some Toronto interests. Camps have been erected and the property is to have some thorough surface prospecting before mining is commenced. The ore is a coarse zinc-blende and galena in a calcite gangue.

## MOLYBDENITE.

Several prospects near Amos, Quebec, have had some work done on them during the summer, but so far no shippers have been developed.

## ASBESTOS.

In Deloro Township on the Deloro-Shaw road a promising looking asbestos property is being developed. The fibre is fair and colour good, but extent of deposit has yet to be determined.

## LIMESTONE.

Shipments from the Farr Quarry near Haileybury were made regularly to the Abitibi Power and Paper Company's plant at Iroquois Falls.

### Mining Opportunities in Northern Ontario.

Along the Temiskaming and Northern Ontario Railway from Cobalt to Porquis Junction, a distance of 125 miles, it was noticeable this year that there was hardly a station from which some mining operations were not being carried on. New districts were being reported from time to time and the older districts were looking better as work proceeded.

Anyone who looked over the unbroken forest of Northern Ontario a dozen years ago and predicted that this district would soon be producing over twenty millions in gold and silver annually would have been put down as a fantastic dreamer; but that figure is surpassed to-day by two and-one-half million dollars and the output is continually increasing.

And yet only a small portion of the country has been prospected. Running north-east and north-west from Cobalt and extending to the Arctic Ocean is the great Canadian Pre-Cambrian Shield, the basement formation of the continent. It contains thousands of square miles and offers to prospectors *better chances of locating valuable mineral deposits than can be found in any other country in the world.*

---

## RE STORES DEPARTMENT, PURCHASES AND ISSUES 1915-1916.

Submit herewith statement covering purchases and issues during the year closing October 31st, 1916, which shows a greater volume of business than any previous year.

Shop stock and coal are the main barometers to indicate activities—the former has more than doubled and the latter shows over 50 per cent. increase.

Three elements contribute to the results:

(a) General business activity over the whole country.

(b) Higher prices attributed to the war.

(c) Replacing property and material destroyed by the lamentable fire at the close of July.

Rails again show a large decrease as it was impossible to get deliveries on outstanding orders, while at the same time stock rail was going out and also a considerable amount of rail was sold that had served its day of usefulness on the railway—a considerable quantity of it realizing twenty-eight dollars per gross ton, which figure had been the base price of rail for many years previous to the commencement of the war.

Nearly all kinds of material show marked increases in price and deliveries slow. Shortage of cars and expanding business in general as well as speeding up manufacture to meet war consumption tended to the slow delivery of material, but notwithstanding, the year's work looms large both in the expenditure of labour and material—the two items, I understand, being almost equal in volume for the year.

Delivery of coal has been a matter of serious concern: labour difficulties, shortage of cars and an abnormal requirement on the American continent is a conjunction of circumstances that we have not had to go into the open market to meet requirements, and many seem to be of the opinion that there is prospect of improvement in conditions in the near future.

We have been able to secure our requirements in lumber thus far at practically same price as last year. A writer in the *Canadian Lumberman* predicts that lumber production will be much below the average this season and that cost of production will fully be twenty-five per cent. above normal.

Ties remained about stationary in price, viz., thirty-two cents average, covering inspection. We expect an increase of three cents average at least as ties are hard to get on account of labour conditions.

Iron and steel products are all high—the rail condition mentioned above may be taken as a measure of the whole line of material except as to scrap. Export of scrap is prohibited which tends to keep prices down as compared with new material.

Scrap disposal has been heavy as a result of the fire and the general depreciation on account of burning shows heavier than what is the result of ordinary wear.

Staff changes during the year have not been excessive, but the heavy demands have meant increased cost for handling material—approximately two thousand dollars. Our payroll for 1915 was .14 of one per cent. of business handled, while this year, nothwithstanding the above increase, the percentage is .08 of one per cent.

I hereby express my thanks to the staff for their effort to meet the abnormal demands of the year and also to all departments for co-operation and assistance. We also feel grateful to the Commission and Toronto office for consideration and courtesies extended in the daily intercourse during the year.

Yours truly,

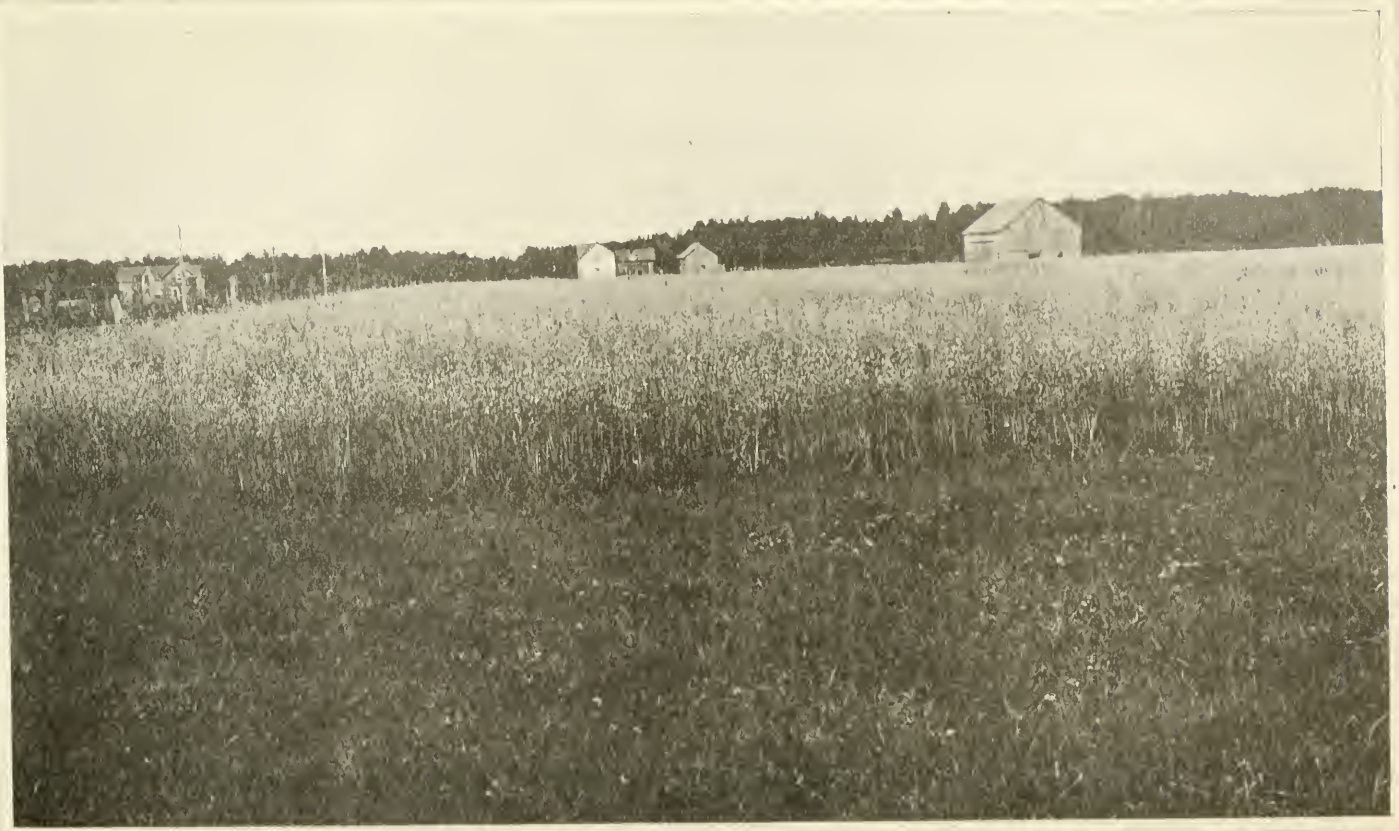
W. A. GRAHAM,

*P. A. & Storekeeper.*

## Stores Department.

Statement of Purchases and Issues Fiscal Years 1915-1916.

| Stock. | 1915 | | 1916 | |
|---|---|---|---|---|
| | Purchases. | Issues. | Purchases. | Issues. |
| | $ c. | $ c. | $ c. | $ c. |
| Shop | 166,125 85 | 166,159 35 | 373,985 43 | 317,216 53 |
| Soft Coal | 271,622 07 | 253,662 97 | 427,717 32 | 374,629 07 |
| Hard Coal | 10,615 55 | 10,872 96 | 9,042 00 | 10,624 13 |
| Oil and Waste | 12,172 09 | 12,190 73 | 19,347 33 | 14,685 14 |
| Stationery | 10,138 40 | 10,676 31 | 17,598 55 | 15,867 78 |
| Rail | 34,345 99 | 19,520 37 | 6,322 30 | 61,093 59 |
| Ties | 6,108 37 | 26,394 98 | 18,402 35 | 31,576 80 |
| Ice | 2,550 55 | 3,303 50 | 3,894 15 | 5,941 01 |
| Operation of Ballast Pits | ..... | 20,198 01 | ..... | 14,986 75 |
| Nipissing Central Railway | 7,390 19 | 11,107 33 | 10,177 35 | 8,935 61 |
| Material for Private Cars | ..... | 37,432 08 | ..... | ..... |
| Locomotives—six new | ..... | ..... | 204,851 00 | 204,851 00 |
| | 521,069 06 | 571,518 59 | 1,091,336 78 | 1,060,408 41 |
| Total Issues | | 571,518 59 | | 1,060,408 41 |
| Total Purchases | | 521,069 06 | | 1,091,336 78 |
| | | 1,092,587 65 | | 2,151,745 19 |
| Pay roll | | 15,300 00 | | 17,374 71 |



Farm of Mr. Frank Keneah, Brentha, Ont.

# FINANCIAL STATEMENTS.

## GENERAL BALANCE SHEET.

### ASSETS.

| | | |
|---|---|---|
| *Property Owned :—* | | |
| Cost of Road as of Oct. 31, 1915 | $17,913,700 48 | |
| Cost of Road for year ended Oct. 31, 1916 | 215,314 59 | |
| | | $18,129,015 07 |
| Cost of Equipment as of Oct. 31, 1915 | $2,243,124 88 | |
| Cost of Equipment for year ended Oct. 31, 1916 | 327,666 83 | |
| | | 2,570,791 71 |
| Investment Nipissing Central Railway | | 483,123 31 |
| Empire Lumber Co. Plant, Latchford | | 6,625 07 |
| *Working Assets :—* | | |
| Cash—Treasurer | $76,670 92 | |
| Cash—Land Agent | 17,104 97 | |
| Accounts Collectible | 192,928 35 | |
| Balance due on Townsite Sales | 37,639 04 | |
| Agents and Conductors | 39,116 64 | |
| Traffic Balances—Freight | 2,062 43 | |
| Traffic Balances—Tickets | 14,252 09 | |
| Material and Supplies | 320,464 11 | |
| Ballast Pit Operations | 48,790 51 | |
| Other Assets | 1,538 46 | |
| | | 750,567 52 |
| *Deferred Debit Items :—* | | |
| Paymaster's Advance | $7,000 00 | |
| Treasurer's Advances | 100 00 | |
| Insurance Paid in Advance | 953 81 | |
| Material Accounts in Transit | 1,573 18 | |
| Accounts in Suspense | 7,935 00 | |
| | | 17,561 99 |
| | | $21,957,684 67 |

### LIABILITIES.

| | | |
|---|---|---|
| Provincial Loan Account | | $21,183,687 59 |
| *Working Liabilities :—* | | |
| Accounts Payable | $526,353 48 | |
| Traffic Balances—Car Mileage | 6,182 30 | |
| Unclaimed Wages | 882 55 | |
| | | 533,418 33 |
| *Deferred Credit Items :—* | | |
| Accrued Depreciation—Equipment | $222,193 34 | |
| Deposits on Sidings | 2,198 83 | |
| Deposits on Contracts | 522 40 | |
| War Tax | 718 19 | |
| In Suspense | 642 38 | |
| | | 226,275 14 |
| *Free Surplus :—* | | |
| Profit and Loss—Balance | | 14,303 61 |
| | | 21,957,684 67 |

### PROFIT AND LOSS.

| | | | |
|---|---|---|---|
| Loss on retired Road and Equipment | $3,021 36 | By Balance, October 31, 1915 | $415,664 24 |
| Uncollectible Accounts—Cancelled | 10,948 88 | Revenue for year ended October 31, 1916 | 528,705 46 |
| Paid Treasurer of Ontario | 1,000,000 00 | Income from Nipissing Central Ry | 20,000 00 |
| | | Townsites | 2,982 87 |
| Balance Carried Forward | 14,303 61 | Balances due on Town Sales | 37,639 04 |
| | | Adjustment Stores Accounts to Inventory | 23,282 24 |
| | $1,028,273 85 | | $1,028,273 85 |

## STATEMENT OF EXPENDITURE ON CONSTRUCTION.

Fiscal Year Ending October 31st, 1916.

| | | |
|---|---|---|
| Engineering | | 2,311 36 |
| Land for transportation purposes | | 5,520 65 |
| Grading | | 29,153 61 |
| Bridges, trestles and culverts | | 28,894 84 |
| Ties | | 4,170 53 |
| Rails | | 14,205 76 |
| Other track material | | 9,533 07 |
| Ballast | | 3,298 40 |
| Track laying and surfacing | | 10,038 78 |
| Right-of-way fences | | 4,982 92 |
| Crossings and signs | | 1,763 13 |
| Station and office buildings | | 37,957 20 |
| Roadway buildings | | 9,313 76 |
| Water stations | | 2,088 06 |
| Fuel stations | | 5,356 58 |
| Shops and engine houses | | 15,294 65 |
| Telegraph and telephone lines | | 8,255 51 |
| Miscellaneous structures | | 6,801 49 |
| Shop machinery | | 2,413 44 |
| Steam locomotives | | 205,580 09 |
| Freight-train cars | *Cr.* | 1,289 33 |
| Passenger-train cars | | 82,453 04 |
| Work equipment | | 40,923 03 |
| Miscellaneous surveys | | 2,775 17 |
| Revision of line | | 11,185 68 |
| | | $542,981 42 |

## DETAILED STATEMENT OF CHARGES TO CONSTRUCTION.

ROAD.

| | | |
|---|---|---|
| Filling trestle M.P. 25.71 and installing culvert | *Cr.* | $40 87 |
| " " " 71.37 " " " | *Cr.* | 90 17 |
| " " " 163.3 " " " | | 593 61 |
| Widening embankments | *Cr.* | 169 94 |
| New siding, Ramore | | 897 53 |
| Extension siding No. 11, North Bay Jct. | | 832 39 |
| Hard coal and heater building, Cochrane | | 565 68 |
| Commercial telephone line, Englehart to Boston Creek | | 640 94 |
| Telephone exchange, Matheson | | 432 72 |
| Heating system, agent's house, Cobalt | | 287 00 |
| Addition to agent's house, Schumacher | | 437 54 |
| Extension to freight siding, shed, Elk Lake | | 308 73 |
| Telegraph line, Englehart to Timmins | | 2,929 00 |
| Telegraph line, New Liskeard to Timmins | | 1,959 85 |
| New siding, Bourkes | | 9 00 |
| " " Nahma | | 9 84 |
| " " Nushka | | 9 00 |
| " " Mindoka | | 29 24 |
| New station, Timmins | | 18,560 06 |
| New siding, Chamberlain | | 9 00 |
| Public and private road crossings | | 1,724 34 |
| New fencing | | 4,695 14 |
| New siding, Heaslip | | 1,006 78 |
| Additional and improved rail fastenings | | 1,881 45 |
| Additional yard facilities, Porquis Jct. | | 23,262 88 |
| Roadbed underdrainage | | 889 21 |
| Replacing timber trestle, M.P. 181.31, with steel | | 2,674 43 |
| Filling trestle, M.P. 162.2, and installing concrete slabs | | 17,576 40 |
| Roadway and spur, New Liskeard wharf | | 4,961 04 |
| Additional shop machinery, North Bay | | 2,403 44 |
| Replacing open beam culverts | | 432 65 |
| Section house, Nushka | | 2 66 |
| Coaling plant, Porquis Jct. | | 5,295 30 |

| | | |
|---|---|---|
| Addition to coach and carpenter shop, North Bay | 239 56 | |
| Water service, Porquis Jct. | 5,109 42 | |
| Passenger train platform, Cochrane | 38 30 | |
| New siding, mileage 233 | 437 51 | |
| " " " 153.5 | 253 61 | |
| Platform, Rosedale, Porcupine Branch | 67 54 | |
| Grading, Cochrane terminals | 505 98 | |
| Roadways, Holland, Nahma, and M.P. 245½ | 284 04 | |
| " Keys, South Porcupine and Iroquois Falls | 1,000 45 | |
| Culvert, mileage 130 | 144 98 | |
| Main line, revision surveys | 2,258 21 | |
| Shelter station, M.P. 122 | 285 14 | |
| Telephone line, Swastika to Boston Creek | 52 83 | |
| " " Matheson to Ramore | 321 39 | |
| " " Porquis to Nellie Lake | 162 11 | |
| " " Matheson to Cochrane | 784 95 | |
| Installation lighting, Matheson Stn. | 4 70 | |
| " " Iroquois Falls | 14 20 | |
| Bachelor section house, Kerr Lake Jct. | 402 64 | |
| Additional yard sidings, Cochrane | 2,024 50 | |
| " " " Englehart | 28,261 21 | |
| Alterations, machine shops, North Bay | 15,441 35 | |
| Pumpmen's dwelling, Porquis Jct. | 1,122 93 | |
| Installation plumbing, etc., Porquis Jct. | 534 97 | |
| Culvert, mileage 55.75 | 468 26 | |
| Electric hoist, ice house, North Bay | 153 84 | |
| Installation track scales, North Bay Jct. | 2,526 25 | |
| Lavatory accommodation, Cobalt Stn. | 251 35 | |
| Replacing culvert, M.P. 224-07 | 2,234 80 | |
| Replacing two culverts, M.P. 0.5, Porcupine Branch | 3,952 01 | |
| Telephone circuit, Kenney's siding to Temagami | 971 72 | |
| Four semi-detached tenement houses, Iroquois Falls | 5,678 56 | |
| Two section and tool houses, Matheson | 5,451 28 | |
| Section and tool house, Nushka | 2,097 83 | |
| " " " " Nahma | 1,333 61 | |
| Tool house, Iroquois Falls | 21 79 | |
| Freight shed, Cochrane | 5,062 12 | |
| " " Matheson | 1,725 35 | |
| Station, Matheson | 4,361 78 | |
| Extra land, Wawbewawa | 50 00 | |
| " " Chamberlain | 75 00 | |
| " " North Bay | 3,513 00 | |
| " " Haileybury | 1,754 05 | |
| North and south half Lot 2, Con. 2, Newmarket | 102 00 | |
| Completion grading Porcupine Branch | 28 15 | |
| Coal shed, Iroquois Falls | 61 28 | |
| Extension siding, Watahbeag | 27 76 | |
| Private sidings installed and removed | 8,617 92 | |
| Roadways, Osseo and McCool, Elk Lake Branch ..... *Cr.* | 8 19 | |
| Water tank, North Bay Jct., removed ..... *Cr.* | 3,021 36 | |
| Engine shed siding, Kerr Lake, removed ..... *Cr.* | 294 43 | |
| Auxiliary storage spur, North Bay Jct., shortened ..... *Cr.* | 65 67 | |
| Siding, Charlton, shortened ..... *Cr.* | 14 00 | |
| " Jocko, " ..... *Cr.* | 530 71 | |
| | | $201,353 74 |

EQUIPMENT.

| | | |
|---|---|---|
| Six Mikado locomotives | $205,580 09 | |
| Ballast and general service cars | 15,190 81 | |
| Betterments, passenger train cars | 2,319 84 | |
| Steel passenger equipment | 77,500 58 | |
| Conductors' vans | 15 85 | |
| Lighting equipment, parlor cafe cars | 2,632 62 | |
| Water tank cars | 732 22 | |
| Official car Temagami | 25,000 00 | |
| Additional freight cars | 1,600 00 | |
| Car 80134 destroyed ..... *Cr.* | 1,321 18 | |
| | | 327,666 83 |

SPECIAL ACCOUNTS.

| | | |
|---|---|---|
| James Bay exploration | $35 15 | |
| Special survey south of North Bay | 1,743 03 | |
| Revision of line, mileage 54-55 | 9,494 11 | |
| " " " " 63 | 1,666 59 | |
| " " " " 80.8-81.2 | 24 98 | |
| Kirkland Lake survey | 271 99 | |
| Cobalt Sudbury location | 232 87 | |
| Electrification studies | 492 13 | |
| | | 13,960 85 |
| | | $542,981 42 |

## COMPARATIVE STATEMENT SHOWING EARNINGS AND EXPENDITURES IN OPERATION

PERIOD 1905 TO 1916, INCLUSIVE.

| Year. | Freight. | Passenger. | Other Revenue. | Maintenance of Way. | Maintenance of Equipment. | Traffic Expenses. | Transportation Expenses. | Misc. Operations. | General Expenses. | Transportation for Investment. Cr. | Total Revenue. | Total Expenditures |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 1905.. | 121,530 46 | 108,681 76 | 23,508 33 | 25,072 89 | 12,533 68 | ..... | 88,342 41 | ..... | 13,823 52 | ..... | 253,720 55 | 139,772 50 |
| 1906.. | 230,552 63 | 254,759 33 | 58,706 89 | 77,265 87 | 46,382 65 | ..... | 215,256 08 | ..... | 23,194 61 | ..... | 544,018 85 | 362,099 21 |
| 1907.. | 390,894 29 | 388,343 03 | 74,282 69 | 112,395 22 | 88,016 79 | ..... | 412,160 52 | ..... | 32,839 76 | ..... | 853,520 01 | 645,412 29 |
| 1908.. | 471,203 41 | 366,504 53 | 135,357 67 | 125,563 43 | 119,563 01 | 12,499 96 | 405,907 58 | ..... | 24,863 45 | ..... | 973,065 61 | 688,397 43 |
| 1909.. | 756,141 66 | 483,110 89 | 121,972 33 | 191,170 18 | 107,078 96 | 9,789 99 | 436,768 41 | ..... | 49,989 34 | ..... | 1,361,224 88 | 794,796 88 |
| 1910.. | 852,886 46 | 606,967 91 | 131,997 65 | 380,314 75 | 137,340 46 | 14,920 04 | 556,740 45 | ..... | 76,045 66 | ..... | 1,591,852 02 | 1,165,361 36 |
| 1911.. | 974,678 33 | 653,063 01 | 153,223 49 | 353,918 92 | 164,145 69 | 17,705 31 | 567,316 97 | ..... | 78,911 74 | ..... | 1,780,964 83 | 1,181,998 63 |
| 1912.. | 929,464 66 | 599,681 73 | 178,303 68 | 346,964 01 | 249,683 22 | 17,461 22 | 676,963 33 | ..... | 93,625 91 | ..... | 1,707,450 07 | 1,384,697 69 |
| 1913.. | 906,476 16 | 576,049 37 | 173,629 32 | 430,820 04 | 242,633 93 | 16,857 36 | 680,480 08 | ..... | 106,758 60 | ..... | 1,656,154 85 | 1,477,550 01 |
| 1914.. | 952,090 35 | 544,820 08 | 173,988 44 | 408,046 15 | 284,935 87 | 18,872 65 | 651,687 20 | ..... | 105,032 36 | ..... | 1,670,898 87 | 1,468,574 23 |
| 1915.. | 925,735 37 | 482,349 80 | 143,466 60 | 325,865 86 | 262,654 51 | 18,135 13 | 625,911 92 | ..... | 95,929 49 | ..... | 1,551,551 77 | 1,328,496 91 |
| 1916.. | 1,320,569 33 | 624,808 12 | 192,744 50 | 349,024 48 | 248,702 04 | 22,465 69 | 842,058 75 | 42,562 89 | 91,317 74 | 1,954 13 | 2,138,121 95 | 1,594,177 46 |
| | 8,832,223 11 | 5,689,139 56 | 1,561,181 59 | 3,126,421 80 | 1,963,670 81 | 148,707 35 | 6,159,593 70 | 42,562 89 | 792,332 18 | 1,954 13 | 16,082,544 26 | 12,231,334 60 |

SUMMARY.

| | | | |
|---|---|---|---|
| Freight Revenue | $8,832,223 11 | Maintenance of Way and Structures | $3,126,421 80 |
| Passenger Revenue | 5,689,139 56 | Maintenance of Equipment | 1,963,670 81 |
| Other Revenue | 1,561,181 59 | Transportation Expenses | 6,159,593 70 |
| | | Traffic Expenses | 148,707 35 |
| | | Miscellaneous Operations | 42,562 89 |
| | | General Expenses | 792,332 18 |
| | | Transportation for Investment—Cr | 1,954 13 |
| | $16,082,544 26 | | $12,231,334 60 |

| | | |
|---|---|---|
| Total Revenue from Transportation | $16,082,544 26 | |
| Total Expenditures | 12,231,334 60 | |
| | | 3,851,209 66 |
| Other Income, etc | | 701,339 11 |
| | | 4,552,548 77 |
| Paid Treasurer of Ontario | | 4,538,245 16 |
| Balance Profit and Loss | | 14,303 61 |

## TEMISKAMING AND NORTHERN

### Comparative Statement of Earnings and Expenditures

| No. | RECEIPTS. | Per Cent. | 1914 November | Per Cent. | 1915 November |
|---|---|---|---|---|---|
| | I. TRANSPORTATION—RAIL LINE: | | $ c. | | $ c. |
| 101 | Freight | ..... | 71,316 58 | ..... | 97,346 05 |
| 102 | Passenger | ..... | 36,977 81 | ..... | 43.433 78 |
| 103 | Excess Baggage | ..... | 497 53 | ..... | 524 23 |
| 105 | Parlor and Chair Car | ..... | 82 00 | ..... | 62 10 |
| 106 | Mail | ..... | 1,787 98 | ..... | 1,952 60 |
| 107 | Express | ..... | 3,560 57 | ..... | 4,337 76 |
| 108 | Other Passenger Train | ..... | ..... | ..... | ..... |
| 109 | Milk | ..... | 80 | ..... | ..... |
| 110 | Switching | ..... | 131 00 | ..... | 1,065 87 |
| 111 | Special Service Train | ..... | ..... | ..... | ..... |
| 112 | Other Freight Train | ..... | ..... | ..... | ..... |
| | Total | ..... | 114.354 27 | ..... | 148,722 39 |
| | III. INCIDENTALS: | | | | |
| 131 | Dining and Buffet | ..... | ..... | ..... | ..... |
| 133 | Station, Train and Boat Privileges | ..... | 362 49 | ..... | 362 49 |
| 135 | Storage—Freight | ..... | 75 68 | ..... | 131 01 |
| 136 | Storage—Baggage | ..... | 50 60 | ..... | 42 65 |
| 137 | Demurrage | ..... | 678 00 | ..... | 492 00 |
| 138 | Telegraph and Telephone | ..... | 3.267 34 | ..... | 3,659 95 |
| 140 | Stockyard | ..... | ..... | ..... | ..... |
| 142 | Rents of Buildings and other Property | ..... | 1.534 64 | ..... | 1,170 51 |
| 143 | Miscellaneous | ..... | 23 64 | ..... | 4 25 |
| | Total | ..... | 5,992 39 | ..... | 5,862 86 |
| | IV. JOINT FACILITY: | | | | |
| 151 | Joint Facility—Cr | ..... | ..... | ..... | ..... |
| 152 | Joint Facility—Dr | ..... | ..... | ..... | 118 18 |
| | Total | ..... | ..... | ..... | 118 18 |
| | TOTAL REVENUE | ..... | 120.346 66 | ..... | 154.467 07 |
| | EXPENDITURES. | | | | |
| 1 | Maintenance of Way and Structures | 22.8 | 27,445 91 | 23.8 | 36,819 46 |
| 2 | Maintenance of Equipment | 16.6 | 19.946 91 | 15.1 | 23.272 14 |
| 3 | Traffic | 1.3 | 1.556 03 | 1. | 1,603 10 |
| 4 | Transportation—Rail Line | 47.1 | 56.735 10 | 37.8 | 58,340 34 |
| 5 | Transportation—Water Line | ..... | ..... | ..... | ..... |
| 6 | Miscellaneous Operations | ..... | ..... | 1.6 | 2.551 09 |
| 7 | General | 4.5 | 5.396 59 | 3.7 | 5.673 50 |
| 8 | Transportation for Investment—Cr | ..... | ..... | .1 | 201 12 |
| | TOTAL OPERATING EXPENSES | 92.3 | 111.080 54 | 82.9 | 128.958 51 |
| | BALANCE | ..... | 9.266 12 | ..... | 26,408 56 |
| | OTHER INCOME: | | | | |
| | Ore Royalties | ..... | ..... | ..... | Dr.1.572 79 |
| | Rent from Locomotives | ..... | 2,082 94 | ..... | 398 96 |
| | Rent from Work Equipment | ..... | 533 75 | ..... | 83 56 |
| | Rent from Passenger Equipment | ..... | ..... | ..... | ..... |
| | Rent from Joint Facilities | ..... | 25 00 | ..... | 1.088 96 |
| | Rent from Lease of Road | ..... | 837 92 | ..... | 1,121 15 |
| | Miscellaneous Income | ..... | ..... | ..... | 112 26 |
| | Outside Operations | ..... | 247 60 | ..... | ..... |
| | Interest | ..... | ..... | ..... | ..... |
| | Total | ..... | 12,993 33 | ..... | 27,640 66 |
| | DEDUCTIONS FROM INCOME: | | | | |
| | Hire of Equipment—Freight Cars | ..... | 2,849 50 | ..... | 4,067 51 |
| | Hire of Equipment—Passenger Cars | ..... | ..... | ..... | 1,805 15 |
| | Rent for Joint Facilities | ..... | ..... | ..... | 312 00 |
| | Outside Operations | ..... | 1,085 89 | ..... | ..... |
| | Total | ..... | 3.935 39 | ..... | 6.184 66 |
| | NET RESULT | ..... | 9.057 94 | ..... | 21.456 00 |

## ONTARIO RAILWAY

by Months, November, 1914, to October 1916

| Per Cent. | 1914 December | Per Cent. | 1915 December | Per Cent. | 1915 January | Per Cent. | 1916 January | No. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | | $ c. | | $ c. | | $ c. | |
| ..... | 78,370 76 | ..... | 102,238 62 | ..... | 87,841 30 | ..... | 93,137 58 | 101 |
| ..... | 37,323 71 | ..... | 43,943 37 | ..... | 30,755 22 | ..... | 38,890 21 | 102 |
| ..... | 209 28 | ..... | 230 25 | ..... | 315 85 | ..... | 288 96 | 103 |
| ..... | 85 10 | ..... | 45 15 | ..... | 85 30 | ..... | 49 80 | 105 |
| ..... | 2,029 86 | ..... | 2,027 70 | ..... | 1,938 04 | ..... | 1,952 60 | 106 |
| ..... | 3,609 54 | ..... | 5,319 35 | ..... | 3,191 72 | ..... | 4,008 47 | 107 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 108 |
| ..... | 18 61 | ..... | ..... | ..... | 50 85 | ..... | ..... | 109 |
| ..... | 379 43 | ..... | 1,069 33 | ..... | 257 81 | ..... | 964 15 | 110 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 111 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 112 |
| ..... | 122,026 29 | ..... | 154,873 77 | ..... | 124,436 09 | ..... | 139,291 77 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2,160 52 | 131 |
| ..... | 362 49 | ..... | 362 49 | ..... | 362 49 | ..... | 362 49 | 133 |
| ..... | 80 42 | ..... | 80 10 | ..... | 126 65 | ..... | 99 38 | 135 |
| ..... | 28 75 | ..... | 30 90 | ..... | 33 05 | ..... | 35 65 | 136 |
| ..... | 1,224 00 | ..... | 694 00 | ..... | 1,206 00 | ..... | 603 00 | 137 |
| ..... | 3,166 79 | ..... | 4,455 19 | ..... | 2,709 87 | ..... | 5,142 74 | 138 |
| ..... | ..... | ..... | ..... | ..... | 57 77 | ..... | ..... | 140 |
| ..... | 545 47 | ..... | 440 19 | ..... | 506 34 | ..... | 440 66 | 142 |
| ..... | Dr. 3 77 | ..... | 42 71 | ..... | 26 44 | ..... | 37 00 | 143 |
| ..... | 5,404 15 | ..... | 6,105 58 | ..... | 5,028 61 | ..... | 8,881 44 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 151 |
| ..... | ..... | ..... | 63 08 | ..... | 24 52 | ..... | 55 64 | 152 |
| ..... | ..... | ..... | 63 08 | ..... | 24 52 | ..... | 55 64 | |
| ..... | 127,430 44 | ..... | 160,916 27 | ..... | 129,440 18 | ..... | 148,117 57 | |
| 24.4 | 31,485 74 | 18.6 | 29,981 40 | 16.8 | 21,771 15 | 21.2 | 31,501 12 | 1 |
| 20.9 | 26,428 44 | 13.6 | 21,829 87 | 21.1 | 27,352 15 | 15.7 | 23,232 31 | 2 |
| 1.4 | 1,862 25 | 1.6 | 2,536 47 | 1.5 | 1,856 28 | 2. | 3,013 91 | 3 |
| 46.8 | 59,757 59 | 39.7 | 63,818 19 | 47.8 | 61,916 32 | 51.5 | 76,280 49 | 4 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| ..... | ..... | 2.0 | 3,286 55 | ..... | ..... | 3.3 | 4,975 78 | 6 |
| 5.6 | 7,093 89 | 5.7 | 9,121 10 | 5. | 6,476 63 | 4.6 | 6,761 42 | 7 |
| ..... | ..... | .1 | 136 95 | ..... | ..... | ..... | 35 86 | 8 |
| 99.4 | 126,627 91 | 81.1 | 130,436 69 | 92.2 | 119,372 53 | 98.3 | 145,729 17 | |
| ..... | 802 53 | ..... | 30,479 58 | ..... | 10,067 65 | ..... | 2,388 40 | |
| ..... | 10,692 53 | ..... | Dr. 375 65 | ..... | Dr. 396 12 | ..... | 8,076 37 | |
| ..... | 582 61 | ..... | 309 99 | ..... | 458 21 | ..... | 159 60 | |
| ..... | 19 66 | ..... | 113 05 | ..... | 17 20 | ..... | Dr. 26 10 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 25 00 | ..... | 1,110 39 | ..... | 3,084 53 | ..... | 1,116 74 | |
| ..... | 837 92 | ..... | 1,140 02 | ..... | 1,586 08 | ..... | 1,044 42 | |
| ..... | ..... | ..... | 81 10 | ..... | ..... | ..... | 8 50 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | 48 09 | ..... | ..... | ..... | ..... | |
| ..... | 12,960 25 | ..... | 32,906 57 | ..... | 14,817 55 | ..... | 12,767 93 | |
| ..... | 5,348 04 | ..... | 4,781 29 | ..... | 6,694 81 | ..... | 7,381 72 | |
| ..... | ..... | ..... | 1,239 98 | ..... | ..... | ..... | 1,436 57 | |
| ..... | ..... | ..... | 318 00 | ..... | ..... | ..... | 315 00 | |
| ..... | 2,390 01 | ..... | ..... | ..... | 2,074 82 | ..... | ..... | |
| ..... | 7,738 05 | ..... | 6,339 27 | ..... | 8,769 63 | ..... | 9,133 29 | |
| ..... | 5,222 20 | ..... | 26,567 30 | ..... | 6,047 92 | ..... | 3,634 64 | |

Comparative Statement of Earnings and Expenditures by

| No. | RECEIPTS. | Per Cent. | 1915 February | Per Cent. | 1916 February | Per Cent. | 1915 March |
|---|---|---|---|---|---|---|---|
| | I. TRANSPORTATION-RAIL LINE: | | $ c. | | $ c. | | $ c. |
| 101 | Freight | ..... | 81,894 86 | ..... | 106,735 47 | ..... | 86,006 71 |
| 102 | Passenger | ..... | 26,244 94 | ..... | 29,940 87 | ..... | 34,909 20 |
| 103 | Excess Baggage | ..... | 395 33 | ..... | 335 28 | ..... | 288 57 |
| 105 | Parlor and Chair Car | ..... | 76 10 | ..... | 48 50 | ..... | 81 45 |
| 106 | Mail | ..... | 1,788 96 | ..... | 1,871 50 | ..... | 1,938 15 |
| 107 | Express | ..... | 2,532 93 | ..... | 4,047 08 | ..... | 2,771 29 |
| 108 | Other Passenger Train | ..... | ..... | ..... | ..... | ..... | ..... |
| 109 | Milk | ..... | 34 79 | ..... | ..... | ..... | 23 09 |
| 110 | Switching | ..... | 304 34 | ..... | 1,095 54 | ..... | 468 98 |
| 111 | Special Service Train— | ..... | ..... | ..... | 226 00 | ..... | ..... |
| 112 | Other Freight Train | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 113,272 25 | ..... | 144,300 24 | ..... | 126,487 44 |
| | III. INCIDENTALS: | | | | | | |
| 131 | Dining and Buffet | ..... | ..... | ..... | 1,075 01 | ..... | ..... |
| 133 | Station, Train and Boat Privileges | ..... | 362 49 | ..... | 362 56 | ..... | 362 49 |
| 135 | Storage—Freight | ..... | 171 19 | ..... | 57 03 | ..... | 103 28 |
| 136 | " —Baggage | ..... | 22 35 | ..... | 18 10 | ..... | 18 50 |
| 137 | Demurrage | ..... | 711 00 | ..... | 615 00 | ..... | 885 75 |
| 138 | Telegraph and Telephone | ..... | 3,044 28 | ..... | 3,457 49 | ..... | 4,502 60 |
| 140 | Stockyard | ..... | ..... | ..... | ..... | ..... | Dr. 28 88 |
| 142 | Rents of Buildings and other Property | ..... | 2,073 07 | ..... | 718 47 | ..... | 177 96 |
| 143 | Miscellaneous | ..... | 1 00 | ..... | 30 83 | ..... | 15 36 |
| | Total | ..... | 6,385 38 | ..... | 6,334 49 | ..... | 6,037 06 |
| | IV. JOINT FACILITY: | | | | | | |
| 151 | Joint Facility—Cr | ..... | ..... | ..... | ..... | ..... | ..... |
| 152 | " " —Dr. | ..... | ..... | ..... | 45 94 | ..... | 62 00 |
| | Total | ..... | ..... | ..... | 45 94 | ..... | 62 00 |
| | TOTAL REVENUE | ..... | 119,657 63 | ..... | 150,588 79 | ..... | 132,462 50 |
| | EXPENDITURES. | | | | | | |
| 1 | Maintenance of Way & Structures | 16.1 | 19,263 72 | 23.5 | 35,310 60 | 24.1 | 31,966 15 |
| 2 | Maintenance of Equipment | 20. | 23,909 34 | 16.3 | 24,491 27 | 21.8 | 28,822 57 |
| 3 | Traffic | 1. | 1,250 95 | 1.3 | 1,902 02 | 1.2 | 1,608 79 |
| 4 | Transportation—Rail Line | 49.8 | 59,556 20 | 51.5 | 77,691 60 | 41.6 | 55,049 45 |
| 5 | " —Water Line | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 | Miscellaneous Operations | ..... | ..... | 2.2 | 3,316 32 | ..... | ..... |
| 7 | General | 5. | 5,951 81 | 4.1 | 6,233 01 | 5.3 | 7,047 66 |
| 8 | Transportation for Investment—Cr. | ..... | ..... | ..... | 25 32 | ..... | ..... |
| | TOTAL OPERATING EXPENSES | 91.9 | 109,932 02 | 98.9 | 148,919 50 | 94. | 124,494 62 |
| | BALANCE | ..... | 9,725 61 | ..... | 1,669 29 | ..... | 7,967 88 |
| | OTHER INCOME: | | | | | | |
| | Ore Royalties | ..... | Dr. 356 63 | ..... | Dr. 364 08 | ..... | 10,877 47 |
| | Rent from Locomotives | ..... | 387 30 | ..... | 143 30 | ..... | 150 22 |
| | Rent from Work Equipment | ..... | 5 50 | ..... | 8 80 | ..... | 20 45 |
| | Rent from Passenger Equipment | ..... | 16 48 | ..... | ..... | ..... | 988 64 |
| | Rent from Joint Facilities | ..... | 25 00 | ..... | 1,046 31 | ..... | 25 00 |
| | Rent from Lease of Road | ..... | 759 44 | ..... | 863 04 | ..... | 749 46 |
| | Miscellaneous Income | ..... | ..... | ..... | 26 24 | ..... | ..... |
| | Outside Operations | ..... | ..... | ..... | ..... | ..... | ..... |
| | Interest | ..... | ..... | ..... | 13 54 | ..... | ..... |
| | Total | ..... | 10,562 70 | ..... | 3,406 44 | ..... | 20,779 12 |
| | DEDUCTIONS FROM INCOME: | | | | | | |
| | Hire of Equipment, Freight Cars | ..... | 4,941 61 | ..... | 9,704 21 | ..... | 5,337 20 |
| | " " Passenger " | ..... | ..... | ..... | 1,322 25 | ..... | ..... |
| | Rent for Joint Facilities | ..... | ..... | ..... | 313 00 | ..... | 304 50 |
| | Outside Operations | ..... | 2,192 42 | ..... | ..... | ..... | 3,582 51 |
| | Total | ..... | 7,134 03 | ..... | 11,339 46 | ..... | 9,224 21 |
| | NET RESULT | ..... | 3,428 67 | ..... | Dr. 7,933 02 | ..... | 11,554 91 |

Months, November, 1914, to October, 1916—Continued

| Per Cent. | 1916 March | Per Cent. | 1915 April | Per Cent. | 1916 April | Per Cent. | 1915 May | No. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | | $ c. | | $ c. | | $ c. | |
| ..... | 141,617 65 | ..... | 59,581 12 | ..... | 173,472 76 | ..... | 60,405 95 | 101 |
| ..... | 38,263 19 | ..... | 36,630 78 | ..... | 45,016 03 | ..... | 38,875 85 | 102 |
| ..... | 440 91 | ..... | 495 57 | ..... | 347 28 | ..... | 438 93 | 103 |
| ..... | 68 10 | ..... | 97 70 | ..... | 74 25 | ..... | 103 40 | 105 |
| ..... | 2,025 78 | ..... | 1,938 04 | ..... | 1,877 50 | ..... | 1,950 36 | 106 |
| ..... | 3,662 41 | ..... | 2,977 82 | ..... | 4,800 03 | ..... | 3,004 22 | 107 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 108 |
| ..... | ..... | ..... | 10 67 | ..... | ..... | ..... | 1 32 | 109 |
| ..... | 1,101 85 | ..... | 459 34 | ..... | 1,120 51 | ..... | 243 81 | 110 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 111 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 112 |
| ..... | 187,179 89 | ..... | 102,191 04 | ..... | 226,708 36 | ..... | 105,023 84 | |
| ..... | 963 59 | ..... | ..... | ..... | ..... | ..... | ..... | 131 |
| ..... | 362 49 | ..... | 362 49 | ..... | 362 49 | ..... | 362 49 | 133 |
| ..... | 215 09 | ..... | 74 12 | ..... | 144 32 | ..... | 78 50 | 135 |
| ..... | 24 50 | ..... | 36 65 | ..... | 32 75 | ..... | 34 10 | 136 |
| ..... | 702 60 | ..... | 517 00 | ..... | 716 00 | ..... | 455 00 | 137 |
| ..... | 4,139 80 | ..... | 3,299 94 | ..... | 5,230 03 | ..... | 3,463 94 | 138 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 140 |
| ..... | 351 82 | ..... | 729 72 | ..... | 328 46 | ..... | 451 91 | 142 |
| ..... | 16 28 | ..... | 16 71 | ..... | 26 78 | ..... | 33 76 | 143 |
| ..... | 6,776 17 | ..... | 5,036 63 | ..... | 6,840 83 | ..... | 4,879 70 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 151 |
| ..... | 52 46 | ..... | 99 | ..... | ..... | ..... | 58 15 | 152 |
| ..... | 52 46 | ..... | 99 | ..... | ..... | ..... | 58 15 | |
| ..... | 193.903 60 | ..... | 107,226 68 | ..... | 233.549 19 | ..... | 109,845 39 | |
| 16.1 | 31,221 35 | 27.8 | 29.850 05 | 12.2 | 28.388 98 | 33.5 | 36,744 68 | 1 |
| 15.9 | 30,903 33 | 24.6 | 26.354 55 | 10.7 | 25,101 54 | 16.6 | 18,172 11 | 2 |
| .7 | 1,441 97 | 1.3 | 1,436 91 | .5 | 1.237 48 | 1.2 | 1.321 56 | 3 |
| 48.5 | 94,015 46 | 44.2 | 47,340 38 | 40.3 | 94,139 11 | 38.4 | 42.227 30 | 4 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| 2. | 3,852 12 | 12.8 | 13,739 92 | .9 | 2,091 37 | 2.1 | 2,340 88 | 6 |
| 3.4 | 6,542 81 | 5.5 | 5,889 77 | 2.6 | 5,977 79 | 5.5 | 6,070 74 | 7 |
| ..... | 30 88 | ..... | ..... | ..... | 35 95 | .1 | 132 52 | 8 |
| 86.6 | 167,946 16 | 116.2 | 124,611 58 | 67.2 | 156.900 32 | 97.2 | 106,744 75 | |
| ..... | 25,957 44 | ..... | Dr. 17,384 90 | ..... | 76,648 87 | ..... | 3,100 64 | |
| ..... | 6,016 22 | ..... | Dr. 357 69 | ..... | Dr. 364 02 | ..... | Dr. 365 14 | |
| ..... | 184 72 | ..... | 188 93 | ..... | 160 72 | ..... | 690 80 | |
| ..... | 16 33 | ..... | 29 96 | ..... | 24 90 | ..... | 236 80 | |
| ..... | ..... | ..... | 4 12 | ..... | ..... | ..... | ..... | |
| ..... | 1,229 23 | ..... | 3,837 23 | ..... | 1,409 19 | ..... | 1.242 54 | |
| ..... | 885 25 | ..... | 804 47 | ..... | 1,183 34 | ..... | 1,728 66 | |
| ..... | 54 00 | ..... | ..... | ..... | 65 50 | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 45 10 | ..... | ..... | ..... | 1 97 | ..... | ..... | |
| ..... | 34,488 29 | ..... | Dr. 12,877 88 | ..... | 79,130 47 | ..... | 6,634 30 | |
| ..... | 14,869 97 | ..... | 2,215 04 | ..... | 16,304 03 | ..... | 1,677 60 | |
| ..... | 1.698 55 | ..... | ..... | ..... | 1,803 88 | ..... | ..... | |
| ..... | 319 00 | ..... | 302 00 | ..... | 312 50 | ..... | 1,515 00 | |
| ..... | ..... | ..... | Cr. 11,078 05 | ..... | ..... | ..... | ..... | |
| ..... | 16.887 52 | ..... | Cr. 8,561 01 | ..... | 18,420 41 | ..... | 3,192 60 | |
| ..... | 17,600 77 | ..... | Dr. 4.316 87 | ..... | 60.710 06 | ..... | 3,441 70 | |

Comparative Statement of Earnings and Expenditures by

| No. | RECEIPTS. | Per Cent | 1916 May | Per Cent. | 1915 June | Per Cent. | 1916 June |
|---|---|---|---|---|---|---|---|
| | I. TRANSPORTATION—RAIL LINE: | | $ c. | | $ c. | | $ c. |
| 101 | Freight | ..... | 129,688 74 | ..... | 68,099 43 | ..... | 91,959 02 |
| 102 | Passenger | ..... | 54,727 06 | ..... | 38,600 15 | ..... | 58,770 50 |
| 103 | Excess Baggage | ..... | 474 21 | ..... | 430 75 | ..... | 480 94 |
| 105 | Parlor and Chair Car | ..... | 85 45 | ..... | 88 20 | ..... | 105 85 |
| 106 | Mail | ..... | 2,025 78 | ..... | 1,952 60 | ..... | 1,952 60 |
| 107 | Express | ..... | 4,696 04 | ..... | 3,561 14 | ..... | 4,885 95 |
| 108 | Other Passenger Train | ..... | ..... | ..... | ..... | ..... | ..... |
| 109 | Milk | ..... | ..... | ..... | 88 | ..... | 15 |
| 110 | Switching | ..... | 728 59 | ..... | 449 07 | ..... | 678 51 |
| 111 | Special Service Train | ..... | ..... | ..... | ..... | ..... | ..... |
| 112 | Other Freight Train | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 192,425 87 | ..... | 113,182 22 | ..... | 158,813 52 |
| | III. INCIDENTALS: | | | | | | |
| 131 | Dining and Buffet | ..... | 1,096 67 | ..... | ..... | ..... | ..... |
| 133 | Station, Train & Boat Privileges | ..... | 362 49 | ..... | 362 49 | ..... | 362 50 |
| 135 | Storage—Freight | ..... | 173 68 | ..... | 104 03 | ..... | 135 23 |
| 136 | " —Baggage | ..... | 32 10 | ..... | 28 40 | ..... | 42 55 |
| 137 | Demurrage | ..... | 1,207 00 | ..... | 695 00 | ..... | 562 00 |
| 138 | Telegraph and Telephone | ..... | 4,529 42 | ..... | 3,679 77 | ..... | 4,301 79 |
| 140 | Stockyard | ..... | ..... | ..... | ..... | ..... | ..... |
| 142 | Rents of Buildings & other Property | ..... | 487 47 | ..... | 789 60 | ..... | 1,096 55 |
| 143 | Miscellaneous | ..... | 20 18 | ..... | 3 85 | ..... | 32 35 |
| | Total | ..... | 7,909 01 | ..... | 5,663 14 | ..... | 6,532 97 |
| | IV. JOINT FACILITY: | | | | | | |
| 151 | Joint Facility—Cr | ..... | ..... | ..... | ..... | ..... | ..... |
| 152 | " —Dr | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | ..... | ..... | ..... | ..... | ..... |
| | TOTAL REVENUE | ..... | 200,334 88 | ..... | 118,845 36 | ..... | 165,346 49 |
| | EXPENDITURES, | | | | | | |
| 1 | Maintenance of Way and Structures | 16.5 | 33,152 63 | 28.7 | 34,058 99 | 22.4 | 37,065 95 |
| 2 | Maintenance of Equipment | 11.2 | 22,250 15 | 16.1 | 19,166 33 | 12.9 | 21,341 88 |
| 3 | Traffic | .8 | 1,519 95 | 1.2 | 1,485 76 | 1. | 1,691 90 |
| 4 | Transportation—Rail Line | 36.5 | 73,215 82 | 36.6 | 43,454 64 | 35.4 | 58,624 87 |
| 5 | " Water Line | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 | Miscellaneous Operations | 1.8 | 3,784 25 | 2.2 | 2,569 77 | 1.4 | 2,257 47 |
| 7 | General | 3.2 | 6,457 00 | 3.5 | 4,231 35 | 4.7 | 7,709 59 |
| 8 | Transportation for Invest'nt—Cr. | .2 | 368 95 | ..... | 94 25 | .1 | 226 53 |
| | TOTAL OPERATING EXPENSES | 69.8 | 140,010 85 | 88.3 | 104,872 59 | 77.7 | 128,465 13 |
| | BALANCE | ..... | 60,324 03 | ..... | 13,972 77 | ..... | 36,881 36 |
| | OTHER INCOME: | | | | | | |
| | Ore Royalties | ..... | Dr. 357 81 | ..... | Dr. 355 81 | ..... | Dr. 485 49 |
| | Rent from Locomotives | ..... | 408 14 | ..... | 429 43 | ..... | 28 01 |
| | Rent from Work Equipment | ..... | 70 20 | ..... | 132 55 | ..... | 105 31 |
| | Rent from Passenger " | ..... | ..... | ..... | ..... | ..... | ..... |
| | Rent from Joint Facilities | ..... | 904 25 | ..... | 1,118 12 | ..... | 1,081 53 |
| | Rent from Lease of Road | ..... | 1,382 20 | ..... | 987 78 | ..... | 1,106 84 |
| | Miscellaneous Income | ..... | 119 84 | ..... | 187 00 | ..... | 62 34 |
| | Outside Operations | ..... | ..... | ..... | ..... | ..... | ..... |
| | Interest | ..... | 365 16 | ..... | ..... | ..... | 14 37 |
| | Total | ..... | 63,216 01 | ..... | 16,471 84 | ..... | 38,794 27 |
| | DEDUCTIONS FROM INCOME: | | | | | | |
| | Hire of Equipment, Freight Cars | ..... | 7,019 91 | ..... | 1,232 19 | ..... | 4,004 57 |
| | " Passenger " | ..... | 2,574 27 | ..... | ..... | ..... | 2,294 71 |
| | Rent for Joint Facilities | ..... | 321 00 | ..... | 302 00 | ..... | 318 50 |
| | Outside Operations | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 9,915 18 | ..... | 1,534 19 | ..... | 6,617 78 |
| | NET RESULT | ..... | 53,300 83 | ..... | 14,937 65 | ..... | 32,176 49 |

Months, November, 1914, to October, 1916—Continued

| Per Cent. | 1915 July | Per Cent. | 1916 July | Per Cent. | 1915 August | Per Cent. | 1916 August | No. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | | $ c. | | $ c. | | $ c. | |
| ..... | 68,759 03 | ..... | 78,564 32 | ..... | 74,112 07 | ..... | 94,070 30 | 101 |
| ..... | 43,895 52 | ..... | 64,057 29 | ..... | 63,734 68 | ..... | 61,493 33 | 102 |
| ..... | 323 49 | ..... | 424 07 | ..... | 321 03 | ..... | 335 99 | 103 |
| ..... | 84 55 | ..... | 108 15 | ..... | 84 25 | ..... | 149 85 | 105 |
| ..... | 2,027 70 | ..... | 1,952 60 | ..... | 1,952 60 | ..... | 2,025 78 | 106 |
| ..... | 3,971 90 | ..... | 4,642 60 | ..... | 4,520 77 | ..... | 6,246 78 | 107 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 108 |
| ..... | 2 80 | ..... | ..... | ..... | 2 45 | ..... | 4 00 | 109 |
| ..... | 343 83 | ..... | 542 08 | ..... | 499 22 | ..... | 838 61 | 110 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | 488 40 | 111 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 112 |
| ..... | 119,408 82 | ..... | 150,291 11 | ..... | 145,227 07 | ..... | 165,653 04 | |
| ..... | ..... | ..... | 774 62 | ..... | ..... | ..... | 2,531 62 | 131 |
| ..... | 452 49 | ..... | 362 52 | ..... | 272 49 | ..... | 362 50 | 133 |
| ..... | 134 53 | ..... | 105 60 | ..... | 86 37 | ..... | 78 54 | 135 |
| ..... | 33 70 | ..... | 38 75 | ..... | 25 15 | ..... | 30 20 | 136 |
| ..... | 568 00 | ..... | 485 00 | ..... | 407 00 | ..... | 948 00 | 137 |
| ..... | 3,667 55 | ..... | 5,670 55 | ..... | 3,555 38 | ..... | 5,125 68 | 138 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 140 |
| ..... | 360 89 | ..... | 559 53 | ..... | 1,197 33 | ..... | 994 74 | 142 |
| ..... | 21 92 | ..... | 16 50 | ..... | 38 12 | ..... | 12 91 | 143 |
| ..... | 5,239 08 | ..... | 8,013 07 | ..... | 5,581 84 | ..... | 10,084 19 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 151 |
| ..... | 45 30 | ..... | 187 39 | ..... | 62 85 | ..... | 48 61 | 152 |
| ..... | 45 30 | ..... | 187 39 | ..... | 62 85 | ..... | 48 61 | |
| ..... | 124,602 60 | ..... | 158,116 79 | ..... | 150,746 06 | ..... | 175,688 62 | |
| 29.7 | 37,084 47 | 13.2 | 20,808 64 | 22.7 | 34,231 99 | 19.4 | 33,964 50 | 1 |
| 18.0 | 22,433 61 | 8. | 12,603 59 | 16.1 | 24,339 51 | 10.0 | 17,643 29 | 2 |
| 1.2 | 1,511 46 | .9 | 1,520 49 | 1.1 | 1,636 03 | 2.1 | 3,758 86 | 3 |
| 38.1 | 47,481 70 | 36.5 | 57,641 04 | 34.4 | 51,821 37 | 35.7 | 62,658 02 | 4 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| 1.8 | 2,392 97 | 2. | 3,209 14 | 1.6 | 2,515 73 | 2.2 | 3,939 13 | 6 |
| 4.8 | 5,958 53 | 4.9 | 7,770 94 | 3.6 | 5,480 34 | 4.3 | 7,478 93 | 7 |
| ..... | 135 18 | .1 | 108 84 | ..... | 170 60 | .1 | 220 58 | 8 |
| 93.6 | 116,727 56 | 65.4 | 103,445 00 | 79.5 | 119,854 37 | 73.6 | 129,222 15 | |
| ..... | 7,875 04 | ..... | 54,671 79 | ..... | 30,891 69 | ..... | 46,466 47 | |
| ..... | Dr. 364 58 | ..... | Dr. 425 74 | ..... | Dr. 363 02 | ..... | 11,741 82 | |
| ..... | 456 88 | ..... | 752 17 | ..... | 311 64 | ..... | 392 74 | |
| ..... | 118 98 | ..... | Dr. 10 15 | ..... | 212 65 | ..... | 281 50 | |
| ..... | 4 12 | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 1,154 74 | ..... | 1,116 74 | ..... | 1,064 73 | ..... | 1,116 74 | |
| ..... | 984 27 | ..... | 1,097 02 | ..... | 979 53 | ..... | 1,203 13 | |
| ..... | 683 28 | ..... | 74 84 | ..... | 679 56 | ..... | 45 14 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,232 54 | |
| ..... | 10,912 73 | ..... | 57,276 67 | ..... | 33,776 78 | ..... | 62,480 08 | |
| ..... | 1,665 95 | ..... | Cr. 1,892 77 | ..... | 6,457 91 | ..... | 8,894 26 | 1 |
| ..... | ..... | ..... | 1,650 67 | ..... | ..... | ..... | Cr. 2,956 94 | |
| ..... | 312 50 | ..... | 316 50 | ..... | 323 00 | ..... | 324 00 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 1,978 45 | ..... | 74 40 | ..... | 6,780 91 | ..... | 6,261 32 | |
| ..... | 8,934 28 | ..... | 57,202 27 | ..... | 26,995 87 | ..... | 56,218 76 | |

† T.R.

## Comparative Statement of Earnings and Expenditures by

| No. | RECEIPTS. | Per Cent. | 1915 September | Per Cent. | 1916 September | Per Cent. | 1915 October |
|---|---|---|---|---|---|---|---|
| | I. TRANSPORTATION-RAIL LINE: | | $ c. | | $ c. | | $ c. |
| 101 | Freight | ..... | 90,374 63 | ..... | 96,826 21 | ..... | 97,970 15 |
| 102 | Passenger | ..... | 46,901 47 | ..... | 80,469 93 | ..... | 47,500 47 |
| 103 | Excess Baggage | ..... | 630 49 | ..... | 373 18 | ..... | 596 00 |
| 105 | Parlor and Chair Car | ..... | 81 90 | ..... | 108 95 | ..... | 72 55 |
| 106 | Mail | ..... | 1,952 60 | ..... | 1,952 60 | ..... | 1,952 60 |
| 107 | Express | ..... | 4,687 32 | ..... | 6,482 33 | ..... | 4,530 33 |
| 108 | Other Passenger Train | ..... | ..... | ..... | ..... | ..... | ..... |
| 109 | Milk | ..... | 2 40 | ..... | 60 | ..... | 1 18 |
| 110 | Switching | ..... | 620 60 | ..... | 824 05 | ..... | 760 97 |
| 111 | Special Service Train | ..... | ..... | ..... | 155 00 | ..... | ..... |
| 112 | Other Freight Train | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 145,251 41 | ..... | 187,192 85 | ..... | 153,384 25 |
| | III. INCIDENTALS: | | | | | | |
| 131 | Dining and Buffet | ..... | ..... | ..... | 2,269 23 | ..... | ..... |
| 133 | Station, Train and Boat Privileges | ..... | 362 49 | ..... | 362 50 | ..... | 362 49 |
| 135 | Storage—Freight | ..... | 93 05 | ..... | 195 40 | ..... | 70 55 |
| 136 | " —Baggage | ..... | 22 30 | ..... | 27 20 | ..... | 22 20 |
| 137 | Demurrage | ..... | 610 00 | ..... | 1,314 00 | ..... | 451 00 |
| 138 | Telegraph and Telephone | ..... | 4,271 56 | ..... | 6,077 54 | ..... | 3,857 58 |
| 140 | Stockyard | ..... | ..... | ..... | ..... | ..... | ..... |
| 142 | Rents of Buildings and other Property | ..... | 543 86 | ..... | 610 81 | ..... | 528 32 |
| 143 | Miscellaneous | ..... | 2 75 | ..... | 42 68 | ..... | 34 13 |
| | Total | ..... | 5,906 01 | ..... | 10,899 36 | ..... | 5,326 27 |
| | IV. JOINT FACILITY: | | | | | | |
| 151 | Joint Facility—Cr | ..... | ..... | ..... | ..... | ..... | ..... |
| 152 | " " —Dr | ..... | 1.38 | ..... | ..... | ..... | 66 73 |
| | Total | ..... | 1.38 | ..... | ..... | ..... | 66 73 |
| | TOTAL REVENUE | ..... | 151,156 04 | ..... | 198,092 21 | ..... | 158,643 79 |
| | EXPENDITURES | | | | | | |
| 1 | Maintenance of Way & Structures | 12.2 | 18,409 05 | 7.9 | 15,648 55 | 7.2 | 11,374 16 |
| 2 | Maintenance of Equipment | 11.3 | 17,041 62 | 6.2 | 12,378 52 | 10.9 | 17,368 26 |
| 3 | Traffic | .9 | 1,417 17 | .5 | 1,047 35 | .9 | 1,377 47 |
| 4 | Transportation—Rail Line | 34.1 | 51,464 25 | 32.8 | 64,994 19 | 36.1 | 57,356 34 |
| 5 | Transportation—Water Line | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 | Miscellaneous Operations | 1.6 | 2,475 19 | 2.3 | 4,485 67 | 1.7 | 2,666 94 |
| 7 | General | 4.3 | 6,464 06 | 5.7 | 11,358 98 | 3.1 | 4,932 78 |
| 8 | Transportation for Invest'nt-Cr | .2 | 275 81 | .1 | 275 80 | .2 | 340 08 |
| | TOTAL OPERATING EXPENSES | 64.2 | 96,995 53 | 55.3 | 109,637 46 | 59.7 | 94,735 87 |
| | BALANCE | ..... | 54,160 51 | ..... | 88,454 75 | ..... | 63,907 92 |
| | OTHER INCOME: | | | | | | |
| | Ore Royalties | ..... | Dr. 371 63 | ..... | Dr. 404 20 | ..... | 7,629 36 |
| | Rent from Locomotives | ..... | 338 51 | ..... | 477 02 | ..... | 297 79 |
| | Rent from Work Equipment | ..... | 90 82 | ..... | 168 90 | ..... | 182 15 |
| | Rent from Passenger " | ..... | Dr. 4 12 | ..... | ..... | ..... | ..... |
| | Rent from Joint Facilities | ..... | 1,088 95 | ..... | 1,083,33 | ..... | 1,124 42 |
| | Rent from Lease of Road | ..... | 834 52 | ..... | 1,163 88 | ..... | 5,511 32 |
| | Miscellaneous Income | ..... | 669 68 | ..... | 166 60 | ..... | 638 46 |
| | Outside Operations | ..... | ..... | ..... | ..... | ..... | ..... |
| | Interest | ..... | ..... | ..... | 6 00 | ..... | ..... |
| | Total | ..... | 56,807 24 | ..... | 91,116 28 | ..... | 79,291 42 |
| | DEDUCTIONS FROM INCOME: | | | | | | |
| | Hire of Equipment, Freight Cars | ..... | 4,770 27 | ..... | 5,160 03 | ..... | Cr.2,366 62 |
| | Hire of Equipment, Passenger Cars | ..... | ..... | ..... | 535 63 | ..... | 7,830 15 |
| | Rent for Joint Facilities | ..... | 315 50 | ..... | 318 50 | ..... | 315 00 |
| | Outside Operations | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 5,085 77 | ..... | 6,014 16 | ..... | 5,778 53 |
| | NET RESULT | ..... | 51,721 47 | ..... | 85,102 12 | ..... | 73,512 89 |

Months, November, 1914, to October, 1916—Continued.

| Per Cent. | 1916 October | Per Cent. | 1915 Total | Per Cent. | 1916 Total | Increase | Decrease | No. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | | $ c. | | $ c. | $ c. | $ c. | |
| ..... | 114,932 61 | ..... | 924,732 59 | ..... | 1,320,569 33 | 395,836 74 | ..... | 101 |
| ..... | 65,802 56 | ..... | 482,349 80 | ..... | 624,808 12 | 142,458 32 | ..... | 102 |
| ..... | 543 30 | ..... | 4,942 82 | ..... | 4,798 60 | ..... | 144 22 | 103 |
| ..... | 78 60 | ..... | 1,022 50 | ..... | 984 75 | ..... | 37 75 | 105 |
| ..... | 1,952 60 | ..... | 23,209 49 | ..... | 23,569 64 | 360 15 | ..... | 106 |
| ..... | 5,719 86 | ..... | 42,919 55 | ..... | 58,848 66 | 15,929 11 | ..... | 107 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 108 |
| ..... | ..... | ..... | 149 84 | ..... | 4 75 | ..... | 145 09 | 109 |
| ..... | 1,015 89 | ..... | 4,918 40 | ..... | 11,044 98 | 6,126 58 | ..... | 110 |
| ..... | ..... | ..... | ..... | ..... | 869 40 | 869 40 | ..... | 111 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 112 |
| ..... | 190,045 42 | ..... | 1,484,244 99 | ..... | 2,045,498 23 | 561,253 24 | ..... | ... |
| ..... | 1,492 19 | ..... | ..... | ..... | 12,363 45 | 12,363 45 | ..... | 131 |
| ..... | 362 50 | ..... | 4,349 88 | ..... | 4,350 02 | 14 | ..... | 133 |
| ..... | 90 58 | ..... | 1,198 37 | ..... | 1,505 96 | 307 59 | ..... | 135 |
| ..... | 15 75 | ..... | 355 75 | ..... | 371 10 | 15 35 | ..... | 136 |
| ..... | 1,356 00 | ..... | 8,407 75 | ..... | 9,694 60 | 1,286 85 | ..... | 137 |
| ..... | 5,007 58 | ..... | 42,486 60 | ..... | 56,797 76 | 14,311 16 | ..... | 138 |
| ..... | ..... | ..... | 28 89 | ..... | ..... | ..... | 28 89 | 140 |
| ..... | 670 63 | ..... | 9,439 11 | ..... | 7,869 84 | ..... | 1,569 27 | 142 |
| ..... | 77 76 | ..... | 213 91 | ..... | 360 23 | 146 32 | ..... | 143 |
| ..... | 9,072 99 | ..... | 66,480 26 | ..... | 93,312 96 | 26,832 70 | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 151 |
| ..... | 117 94 | ..... | 321 92 | ..... | 689 24 | 367 32 | ..... | 152 |
| ..... | 117 94 | ..... | 321 92 | ..... | 689 24 | 367 32 | ..... ..... | |
| ..... | 199,000 47 | ..... | 1,550,403 33 | ..... | 2,138,121 95 | 587,718 62 | ..... | |
| | | | | | | | | |
| 7.6 | 15,161 24 | 21.5 | 333,686 06 | 16.3 | 349,024 48 | 15,338 42 | ..... | 1 |
| 6.9 | 13,654 15 | 17.5 | 271,335 40 | 11.6 | 248,702 04 | ..... | 22,633 36 | 2 |
| .6 | 1,192 19 | 1.2 | 18,320 66 | 1.1 | 22,465 69 | 4,145 03 | ..... | 3 |
| 30.5 | 60,639 62 | 40.9 | 634,160 64 | 39.4 | 842,058 75 | 207,898 11 | ..... | 4 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| 2.4 | 4,814 00 | 1.9 | 28,701 40 | 2. | 42,562 89 | 13,861 49 | ..... | 6 |
| 5.1 | 10,232 67 | 4.6 | 70,994 15 | 4.3 | 91,317 74 | 20,323 59 | ..... | 7 |
| .1 | 287 35 | .1 | 1,148 44 | .1 | 1,954 13 | 805 69 | ..... | 8 |
| 53. | 105,406 52 | 87.5 | 1,356,049 87 | 74.6 | 1,594,177 46 | 238,127 59 | ..... | |
| ..... | 93,593 95 | ..... | 194,353 46 | ..... | 543,944 49 | 349,591 03 | ..... | |
| ..... | 28,392 99 | ..... | 26,268 74 | ..... | 49,877 62 | 23,608 88 | ..... | |
| ..... | Dr. 186 05 | ..... | 6,375 26 | ..... | 3,229 32 | ..... | 3,145 94 | |
| ..... | 141 08 | ..... | 1,600 47 | ..... | 977 38 | ..... | 623 09 | |
| ..... | ..... | ..... | 1,009 24 | ..... | ..... | ..... | 1,009 24 | |
| ..... | 6,217 04 | ..... | 13,815 26 | ..... | 18,620 45 | 4,805 19 | ..... | |
| ..... | 1,156 75 | ..... | 16,601 37 | ..... | 13,347 04 | ..... | 3,254 33 | |
| ..... | 213 42 | ..... | 2,857 98 | ..... | 1,029 78 | ..... | 1,828 20 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 9 59 | ..... | ..... | ..... | 1,736 36 | 1,736 36 | ..... | |
| ..... | 129,538 77 | ..... | 262,881 78 | ..... | 632,762 44 | 369,880 66 | ..... | |
| ..... | 6,806 85 | ..... | 40,823 50 | ..... | 87,101 58 | 46,278 08 | ..... | |
| ..... | Cr. 252 32 | ..... | 7,830 15 | ..... | 13,152 40 | 5,322 25 | ..... | |
| ..... | 315 00 | ..... | 3,689 50 | ..... | 3,803 00 | 113 50 | ..... | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 6,869 53 | ..... | 52,343 15 | ..... | 104,056 98 | 51,713 83 | ..... | |
| ..... | 122,669 24 | ..... | 210,538 63 | ..... | 528,705 46 | 318,166 83 | ..... | |

Comparative Statement of Earnings and Expenditures by

| No. | Maintenance of Way and Structures | 1914 November. | 1915 November. | 1914 December. | 1915 December. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 201 | Superintendence | 2,335 20 | 1,772 86 | 2,150 17 | 1,782 06 |
| 202 | Roadway Maintenance | 7,183 32 | 6,587 79 | 6,995 58 | 4,499 91 |
| 208 | Bridges, Trestles and Culverts | 1,571 14 | 1,316 43 | 8,314 14 | 1,705 61 |
| 212 | Ties | 519 11 | 4,021 35 | 118 81 | 3,507 91 |
| 214 | Rails | 941 95 | 2,125 51 | 1,089 15 | 2,296 03 |
| 216 | Other Track Material | 1,034 13 | 4,244 71 | 1,417 08 | Cr. 511 06 |
| 218 | Ballast | Cr. 167 32 | 996 19 | 41 22 | 886 23 |
| 220 | Track Laying and Surfacing | 8,060 05 | 10,869 78 | 5,873 70 | 7,433 65 |
| 221 | Right-of-Way Fences | 129 31 | 389 65 | ..... | Cr. 37 04 |
| 225 | Crossings and Signs | 240 49 | 94 99 | 53 13 | 205 59 |
| 227 | Station and Office Buildings | 1,234 88 | 976 49 | 707 44 | 753 65 |
| 229 | Roadway Buildings | 256 63 | 133 21 | 240 06 | 171 59 |
| 231 | Water Stations | 275 25 | 357 87 | 167 68 | 3,238 62 |
| 233 | Fuel Stations | 111 63 | 12 29 | 38 69 | 28 39 |
| 235 | Shops and Enginehouses | 808 98 | 1,360 92 | 765 92 | 1,122 96 |
| 247 | Telegraph and Telephone Lines | 218 52 | 319 75 | 306 01 | 382 84 |
| 249 | Signals and Interlockers | 3 48 | 94 | ..... | ..... |
| 265 | Miscellaneous Structures | 133 44 | 98 99 | 5 24 | ..... |
| 269 | Roadway Machines | 13 41 | 36 28 | 8 70 | 48 90 |
| 271 | Small Tools and Supplies | 315 49 | 198 30 | 505 86 | 236 07 |
| 272 | Removing Snow, Ice and Sand | 1,250 41 | 541 53 | 2,089 20 | 3,735 17 |
| 274 | Injuries to Persons | ..... | 69 52 | 75 00 | 6 27 |
| 275 | Insurance | 954 85 | 283 90 | 615 14 | 239 14 |
| 276 | Stationery and Printing | 36 89 | 29 51 | 95 05 | 45 53 |
| 277 | Other Expenses | ..... | 1 20 | ..... | ..... |
| 278 | Maintaining Joint Tracks, Yards, and other Facilities—Dr. | 118 00 | 212 00 | 108 00 | 218 00 |
| 279 | Maintaining Joint Tracks, Yards, and other Facilities—Cr. | 133 33 | 232 50 | 295 23 | 2,014 56 |
| | Total | 27,445 91 | 36,819 46 | 31,485 74 | 29,981 46 |
| | Maintenance of Equipment. | | | | |
| 301 | Superintendence | 689 41 | 880 10 | 734 02 | 1,037 48 |
| 302 | Shop Machinery | 255 08 | 553 29 | 620 30 | 515 20 |
| 308 | Steam Locomotives—Repairs | 6,777 54 | 7,233 64 | 10,239 59 | 7,874 93 |
| 309 | " " —Depreciation | 1,237 13 | 1,247 13 | 1,237 13 | 1,247 13 |
| 314 | Freight Train Cars—Repairs | 411 83 | 3,111 61 | 2,144 40 | 2,213 53 |
| 315 | " " " —Depreciation | 1,027 28 | 1,038 55 | 1,027 28 | 1,038 55 |
| 316 | " " " —Retirements | ..... | ..... | ..... | ..... |
| 317 | Passenger Train Cars—Repairs | 4,355 17 | 5,692 91 | 4,309 90 | 5,631 30 |
| 318 | " " " —Depreciation | 1,170 07 | 1,114 45 | 1,170 07 | 1,114 45 |
| 319 | " " " —Retirements | ..... | ..... | ..... | ..... |
| 326 | Work Equipment—Repairs | 3,285 23 | 1,587 11 | 3,745 79 | 514 60 |
| 327 | " " —Depreciation | 278 12 | 338 41 | 278 12 | 338 41 |
| 329 | Miscellaneous Equipment—Repairs | ..... | ..... | ..... | ..... |
| 332 | Injuries to Persons | 86 | 37 59 | 76 68 | ..... |
| 333 | Insurance | 381 94 | 563 52 | 796 27 | 437 42 |
| 334 | Stationery and Printing | 82 52 | 63 58 | 56 39 | 76 92 |
| 335 | Other Expenses | Cr. 5 27 | 118 04 | Cr. 7 50 | 118 20 |
| 336 | Maintaining Joint Equipment at Terminals—Dr. | ..... | ..... | ..... | ..... |
| 337 | Maintaining Joint Equipment at Terminals—Cr. | ..... | 307 79 | ..... | 328 25 |
| | Total | 19,946 91 | 23,272 14 | 26,428 44 | 21,829 87 |

Months, November, 1914, to October, 1916---Continued.

| 1915 January. | 1916 January. | 1915 February. | 1916 February. | 1915 March. | 1916 March. | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 1,806 62 | 1,519 80 | 1,806 43 | 1,623 03 | 1,894 58 | 1,870 74 | 201 |
| 4,204 85 | 4,409 41 | 4,399 79 | 3,875 16 | 5,758 91 | 4,695 69 | 202 |
| 915 41 | 1,324 19 | 1,031 58 | 971 98 | 2,192 10 | 793 30 | 208 |
| 48 90 | 3,465 00 | ..... | 3,468 70 | 4,435 26 | 3,465 00 | 212 |
| 175 97 | 705 40 | 228 16 | 1,104 18 | 1,957 81 | 1,440 75 | 214 |
| 1,159 21 | 1,207 63 | 764 41 | 1,552 13 | 1,234 42 | 1,243 26 | 216 |
| ..... | 1,000 00 | 6 36 | 1,047 11 | 1,500 00 | 1,000 00 | 218 |
| 5,095 23 | 5,200 35 | 4,370 06 | 6,152 07 | 8,391 73 | 7,883 25 | 220 |
| 7 78 | ..... | ..... | ..... | 118 13 | 16 89 | 221 |
| 67 28 | 103 59 | 8 34 | 18 70 | 26 25 | 37 57 | 225 |
| 1,288 57 | 839 98 | 572 83 | 577 56 | 616 49 | 666 61 | 227 |
| 45 33 | 85 10 | 63 64 | 35 91 | 171 02 | Cr. 72 15 | 229 |
| 277 04 | Cr. 2,579 38 | 285 33 | 318 11 | 91 06 | 401 96 | 231 |
| 6 72 | 20 78 | 04 | 36 82 | 69 80 | 183 17 | 233 |
| 508 93 | 420 42 | 254 95 | 434 57 | 498 74 | 273 64 | 235 |
| 247 26 | 335 50 | 228 01 | 282 45 | 293 57 | 422 67 | 247 |
| 20 42 | 18 26 | 3 34 | Cr. 70 | 7 48 | 1 75 | 249 |
| 3 08 | ..... | ..... | 1 32 | 15 45 | 12 10 | 265 |
| 48 99 | 101 03 | 130 52 | 135 41 | 116 70 | 153 00 | 269 |
| 388 62 | 212 85 | 318 81 | 120 16 | 358 36 | 86 92 | 271 |
| 5,066 13 | 11,347 00 | 4,445 25 | 13,500 45 | 1,797 25 | 6,834 58 | 272 |
| ..... | ..... | ..... | 7 84 | ..... | 10 32 | 274 |
| 623 58 | 239 06 | 630 37 | 238 96 | 547 86 | 239 98 | 275 |
| 102 13 | 70 38 | 45 56 | 61 32 | 104 37 | 44 95 | 276 |
| ..... | ..... | ..... | ..... | ..... | ..... | 277 |
| 104 00 | 215 00 | 96 00 | 213 00 | 204 50 | 219 00 | 278 |
| 440 90 | Dr. 1,239 77 | 426 06 | 465 64 | 435 69 | 703 60 | 279 |
| 21,771 15 | 31,501 12 | 19,263 72 | 35,310 60 | 31,966 15 | 31,221 35 | |
| | | | | | | |
| 856 11 | 1,085 17 | 857 99 | 1,006 31 | 862 50 | 950 41 | 301 |
| 562 87 | 716 17 | 375 93 | 533 76 | 436 81 | 759 79 | 302 |
| 10,733 76 | 9,085 43 | 7,284 68 | 9,333 03 | 11,068 76 | 10,527 22 | 308 |
| 1,237 13 | 1,247 13 | 1,237 13 | 1,247 13 | 1,237 13 | 1,247 13 | 309 |
| 3,002 91 | 2,658 15 | 2,487 55 | 4,194 41 | 2,378 20 | 5,947 67 | 314 |
| 1,027 28 | 1,038 55 | 1,027 28 | 1,038 55 | 1,027 28 | 1,038 55 | 315 |
| ..... | ..... | ..... | ..... | ..... | ..... | 316 |
| 4,297 35 | 4,950 79 | 7,386 85 | 4,603 09 | 2,435 64 | 8,401 45 | 317 |
| 1,170 07 | 1,114 45 | 1,170 07 | 1,114 45 | 1,170 07 | 1,114 45 | 318 |
| ..... | ..... | ..... | ..... | ..... | ..... | 319 |
| 3,351 76 | 808 17 | 916 97 | 770 77 | 7,268 55 | 396 36 | 326 |
| 278 12 | 338 41 | 278 12 | 338 41 | 278 12 | 338 41 | 327 |
| ..... | ..... | ..... | ..... | ..... | ..... | 329 |
| 17 | ..... | ..... | 29 25 | ..... | 2 04 | 332 |
| 813 11 | 423 44 | 813 11 | 429 62 | 813 11 | 430 82 | 333 |
| 80 51 | 78 93 | 82 36 | 124 79 | 107 51 | 118 53 | 334 |
| Cr. 59 00 | 118 59 | Cr. 8 70 | 118 44 | 80 47 | 117 93 | 335 |
| ..... | ..... | ..... | ..... | ..... | ..... | 336 |
| ..... | 431 07 | ..... | 390 74 | 341 58 | 487 43 | 337 |
| 27,352 15 | 23,232 31 | 23,909 34 | 24,491 27 | 28,822 57 | 30,903 33 | |

## Comparative Statement of Earnings and Expenditures by

| No. | Maintenance of Way and Structures. | 1915 April. | 1916 April. | 1915 May. | 1916 May. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 201 | Superintendence | 1,980 24 | 1,982 82 | 2,017 48 | 2,276 58 |
| 202 | Roadway Maintenance | 7,649 43 | 8,103 44 | 7,523 80 | 7,211 79 |
| 208 | Bridges, Trestles and Culverts | 2,333 39 | 1,353 51 | 3,529 15 | 1,243 43 |
| 212 | Ties | 4,431 03 | 3,465 00 | 4,633 69 | 4,260 80 |
| 214 | Rails | 1,695 36 | 884 87 | 3,188 90 | 1,591 74 |
| 216 | Other Track Material | 613 61 | 1,070 38 | 97 58 | 439 51 |
| 218 | Ballast | 1,501 89 | 1,000 00 | 1,513 05 | 1,000 00 |
| 220 | Track Laying and Surfacing | 5,515 06 | 6,958 32 | 8,224 61 | 9,415 07 |
| 221 | Right-of-Way Fences | 280 91 | 191 57 | 203 74 | 466 66 |
| 225 | Crossings and Signs | 82 44 | 118 19 | 344 17 | 97 92 |
| 227 | Station and Office Buildings | 761 02 | 988 66 | 1,929 44 | 2,396 43 |
| 229 | Roadway Buildings | 128 22 | 126 92 | 155 08 | 129 96 |
| 231 | Water Stations | 158 02 | 237 11 | 1,059 57 | 391 90 |
| 233 | Fuel Stations | 37 46 | 27 36 | 42 62 | 687 02 |
| 235 | Shops and Enginehouses | 1,211 76 | 342 96 | 727 17 | 253 40 |
| 247 | Telegraph and Telephone Lines | 249 95 | 271 70 | 203 60 | 455 21 |
| 249 | Signals and Interlockers | ..... | ..... | 37 50 | ..... |
| 265 | Miscellaneous Structures | 28 93 | 2 24 | 8 72 | 1 03 |
| 269 | Roadway Machines | 164 24 | 237 22 | 118 58 | 611 50 |
| 271 | Small Tools and Supplies | 385 95 | 440 55 | 453 43 | 434 90 |
| 272 | Removing Snow, Ice and Sand | 194 04 | 390 68 | 15 92 | ..... |
| 274 | Injuries to Persons | ..... | ..... | ..... | 37 38 |
| 275 | Insurance | 623 59 | 238 65 | 639 49 | 235 42 |
| 276 | Stationery and Printing | 51 05 | 105 30 | 48 28 | 109 82 |
| 277 | Other Expenses | ..... | ..... | ..... | ..... |
| 278 | Maintaining Joint Tracks, Yards, and other Facilities—Dr. | 202 00 | 212 50 | 589 00 | 221 00 |
| 279 | Maintaining Joint Tracks, Yards, and other Facilities—Cr. | 429 54 | 360 97 | 559 89 | 815 84 |
| | Total | 29,850 05 | 28,388 98 | 36,744 68 | 33,152 63 |
| | Maintenance of Equipment. | | | | |
| 301 | Superintendence | 811 45 | 1,018 27 | 860 03 | 997 85 |
| 302 | Shop Machinery | 319 67 | 548 84 | 248 49 | 400 39 |
| 308 | Steam Locomotives—Repairs | 9,084 93 | 8,086 33 | 4,913 44 | 7,840 99 |
| 309 | " " —Depreciation | 1,237 13 | 1,247 13 | 1,237 13 | 1,247 13 |
| 314 | Freight Train Cars—Repairs | 1,405 86 | 5,285 58 | 738 73 | 2,305 83 |
| 315 | " " " —Depreciation. | 1,027 28 | 1,038 55 | 1,027 28 | 1,038 55 |
| 316 | " " " —Retirements. | ..... | ..... | ..... | ..... |
| 317 | Passenger Train Cars—Repairs | 3,714 13 | 4,623 50 | 3,526 29 | 3,082 65 |
| 318 | " " " —Depreciation. | 1,170 07 | 1,114 45 | 1,170 07 | 1,114 45 |
| 319 | " " " —Retirements | ..... | ..... | ..... | ..... |
| 326 | Work Equipment—Repairs | 6,755 31 | 1,609 75 | 3,646 68 | 3,595 42 |
| 327 | " " —Depreciation | 278 12 | 338 41 | 278 12 | 338 41 |
| 329 | Miscellaneous Equipment—Repairs | 2 56 | ..... | ..... | ..... |
| 332 | Injuries to Persons | 17 | ..... | ..... | 37 53 |
| 333 | Insurance | 813 11 | 430 79 | 706 20 | 428 52 |
| 334 | Stationery and Printing | 55 18 | 71 70 | 61 19 | 94 80 |
| 335 | Other Expenses | ..... | 117 32 | ..... | 126 97 |
| 336 | Maintaining Joint Equipment at Terminals—Dr. | ..... | ..... | ..... | ..... |
| 337 | Maintaining Joint Equipment at Terminals—Cr. | 320 42 | 429 08 | 241 54 | 399 34 |
| | Total | 26,354 55 | 25,101 54 | 18,172 11 | 22,250 15 |

Months, November, 1914, to October, 1916—Continued.

| 1915 June. | 1916 June. | 1915 July. | 1916 July. | 1915 August. | 1916 August. | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 2,203 93 | 2,271 73 | 2,172 17 | 2,227 29 | 1,977 28 | 2,381 41 | 201 |
| 5,358 88 | 5,923 47 | 7,282 52 | 5,564 93 | 5,378 22 | 6,273 56 | 202 |
| 2,639 58 | 676 31 | 4,133 01 | 776 50 | 3,202 39 | 534 14 | 208 |
| 4,629 47 | 8,554,46 | 4,470 52 | Cr. 1,516 80 | 3,126 92 | 4,107 25 | 212 |
| 1,517 86 | 1,078 35 | 1,557 98 | Cr. 797 22 | 1,424 64 | 21 16 | 214 |
| 433 06 | 1,379 04 | 212 76 | 382 75 | 511 35 | 1,091 11 | 216 |
| 1,500 00 | 994 85 | 1,782 92 | Cr. 589 14 | Cr. 645 10 | Cr. 580 55 | 218 |
| 11,372 86 | 11,501 83 | 11,332 27 | 10,953 01 | 13,956 62 | 13,312 87 | 220 |
| 314 90 | 300 56 | 162 18 | 47 71 | 1,040 95 | 267 19 | 221 |
| 235 72 | 64 93 | 190 00 | 84 53 | 125 55 | 52 75 | 225 |
| 1,944 65 | 1,780 76 | 1,466 94 | 1,275 25 | 1,527 34 | 2,527 60 | 227 |
| 67 69 | 590 06 | 100 23 | 261 69 | 221 11 | 81 76 | 229 |
| 195 36 | 538 25 | 645 95 | 127 72 | 476 29 | 400 77 | 231 |
| 104 14 | 162 92 | 20 29 | 6 75 | 18 02 | 5 25 | 233 |
| 380 08 | 384 77 | 386 89 | 256 24 | 612 85 | 373 21 | 235 |
| 235 91 | 389 02 | 269 22 | 522 23 | 298 19 | 1,084 53 | 247 |
| Cr. 10 00 | 3 14 | 1 45 | 4 13 | ..... | 11 18 | 249 |
| 23 | ..... | 212 46 | ..... | 65 13 | ..... | 265 |
| 38 13 | 284 10 | 74 37 | 318 38 | 96 90 | 767 25 | 269 |
| 191 86 | 348 57 | 230 23 | 113 32 | 255 19 | 1,140 19 | 271 |
| 176 34 | Cr. 90 00 | ..... | ..... | ..... | ..... | 272 |
| 16 96 | 12 21 | 7 11 | 712 32 | ..... | 8 80 | 274 |
| 666 92 | 242 14 | 628 54 | 241 50 | 635 46 | 269 02 | 275 |
| 51 43 | 67 78 | 34 87 | 54 16 | 18 16 | 35 72 | 276 |
| ..... | ..... | ..... | ..... | 25 00 | ..... | 277 |
| 202 00 | 218 50 | 212 50 | 216 50 | 223 00 | 224 00 | 278 |
| 408 97 | 611 80 | 502 91 | 435 11 | 339 47 | 425 67 | 279 |
| 34,058 99 | 37,065 95 | 37,084 47 | 20,808 64 | 34,231 99 | 33,964 50 | |
| | | | | | | |
| 925 37 | 961 59 | 898 27 | 1,073 78 | 887 36 | 1,097 97 | 301 |
| 247 36 | 325 35 | 320 81 | 195 79 | 478 72 | 525 22 | 302 |
| 5,397 53 | 7,579 69 | 5,937 48 | 6,805 50 | 5,466 77 | 7,307 81 | 308 |
| 1,237 13 | 1,247 13 | 1,237 13 | 1,247 13 | 1,237 13 | 1,247 13 | 309 |
| 716 64 | 2,699 69 | 2,012 87 | 1,604 28 | 1,624 12 | 3,306 86 | 314 |
| 1,027 28 | 1,038 55 | 1,027 28 | 1,038 55 | 1,027 28 | 1,038 55 | 315 |
| ..... | ..... | ..... | ..... | ..... | 418 72 | 316 |
| 3,679 11 | 4,518 77 | 3,566 85 | 4,252 65 | 4,641 82 | 5,270 54 | 317 |
| 1,170 07 | 1,114 45 | 1,170 07 | 1,114 45 | 1,170 07 | 1,114 45 | 318 |
| ..... | ..... | ..... | ..... | ..... | ..... | 319 |
| 3,780 05 | 1,301 97 | 5,409 18 | Cr. 5,487 99 | 6,898 10 | Cr. 4,259 83 | 326 |
| 278 12 | 338 41 | 278 12 | 338 41 | 278 12 | 338 41 | 327 |
| ..... | ..... | ..... | ..... | ..... | ..... | 329 |
| 8 14 | 1 55 | 16 09 | 169 04 | ..... | 34 46 | 332 |
| 721 75 | 425 48 | 656 96 | 425 44 | 719 77 | 425 31 | 333 |
| 83 92 | 70 74 | 68 30 | 97 35 | 49 77 | 68 49 | 334 |
| 115 74 | 5 15 | 115 64 | 4 70 | 115 64 | 12 30 | 335 |
| ..... | ..... | ..... | ..... | ..... | ..... | 336 |
| 221 88 | 286 64 | 281 44 | 275 49 | 255 16 | 303 10 | 337 |
| 19,166 33 | 21,341 88 | 22,433 61 | 12,603 59 | 24,339 51 | 17,643 29 | |

## Comparative Statement of Earnings and Expenditures by

| No. | Maintenance of Way and Structures. | 1915 September. | 1916 September. | 1915 October. |
|---|---|---|---|---|
| | | $ c. | $ c. | $ c. |
| 201 | Superintendence | 2,032 21 | 2,263 40 | 2,023 96 |
| 202 | Roadway Maintenance | Cr. 98 57 | 4,052 98 | 826 25 |
| 208 | Bridges, Trestles and Culverts | 205 51 | Cr. 907 53 | 354 35 |
| 212 | Ties | 4,279 07 | Cr. 2,194 01 | Cr. 1,847 73 |
| 214 | Rails | Cr. 3,866 35 | Cr. 2,219 92 | Cr. 1,185 97 |
| 216 | Other Track Material | Cr. 198 47 | 38 22 | 711 49 |
| 218 | Ballast | Cr. 657 13 | Cr. 580 55 | Cr. 2,716 56 |
| 220 | Track Laying and Surfacing | 12,135 23 | 10,771 93 | 9,602 22 |
| 221 | Right-of-Way Fences | 801 23 | 151 45 | 797 66 |
| 225 | Crossings and Signs | 126 76 | 93 62 | 72 58 |
| 227 | Station and Office Buildings | 1,243 17 | 2,283 37 | 963 64 |
| 229 | Roadway Buildings | 193 98 | 105 40 | 24 30 |
| 231 | Water Stations | 668 14 | 176 81 | Cr. 23 79 |
| 233 | Fuel Stations | ..... | 7 65 | 78 26 |
| 235 | Shops and Enginehouses | 100 94 | 588 43 | 729 38 |
| 247 | Telegraph and Telephone Lines | 399 99 | 365 58 | 333 58 |
| 249 | Signals and Interlockers | ..... | 1 37 | Cr. 2 43 |
| 265 | Miscellaneous Structures | ..... | ..... | 51 59 |
| 269 | Roadway Machines | 124 79 | 167 27 | 18 30 |
| 271 | Small Tools and Supplies | 266 98 | 239 49 | 131 76 |
| 272 | Removing Snow, Ice and Sand | ..... | ..... | Cr. 12 17 |
| 274 | Injuries to Persons | 40 98 | 18 03 | ..... |
| 275 | Insurance | 599 66 | 253 09 | 654 74 |
| 276 | Stationery and Printing | 94 12 | 61 28 | 26 76 |
| 277 | Other Expenses | ..... | ..... | 1 00 |
| 278 | Maintaining Joint Tracks, Yards, and other Facilities—Dr. | 215 50 | 218 50 | 215 00 |
| 279 | Maintaining Joint Tracks, Yards, and other Facilities—Cr. | 298 69 | 307 31 | 454 01 |
| | Total | 18,409 05 | 15,648 55 | 11,374 16 |
| | Maintenance of Equipment. | | | |
| 301 | Superintendence | 876 07 | 1,189 27 | 907 46 |
| 302 | Shop Machinery | 384 05 | 366 10 | 291 30 |
| 308 | Steam Locomotives—Repairs | 5,618 64 | 5,093 93 | 3,746 46 |
| 309 | " " —Depreciation | 1,237 13 | 1,247 13 | 1,237 13 |
| 314 | Freight Train Cars—Repairs | 749 39 | 600 16 | Cr. 1,463 99 |
| 315 | " " " —Depreciation | 1,027 28 | 1,038 55 | 1,027 28 |
| 316 | " " " —Retirements | ..... | ..... | ..... |
| 317 | Passenger Train Cars—Repairs | 4,205 96 | 5,766 22 | 1,771 30 |
| 318 | " " " —Depreciation. | 1,170 07 | 1,114 45 | 1,170 07 |
| 319 | " " " —Retirements. | ..... | ..... | ..... |
| 326 | Work Equipment—Repairs | 811 60 | Cr. 4,607 06 | 7,786 77 |
| 327 | " " —Depreciation | 278 12 | 338 41 | 278 12 |
| 329 | Miscellaneous Equipment Repairs | ..... | ..... | ..... |
| 332 | Injuries to Persons | 26 88 | 27 23 | 15 |
| 333 | Insurance | 711 66 | 424 20 | 733 90 |
| 334 | Stationery and Printing | 88 34 | 86 71 | 67 69 |
| 335 | Other Expenses | 115 64 | ..... | 115 64 |
| 336 | Maintaining Joint Equipment at Terminals—Dr. | ..... | ..... | ..... |
| 337 | Maintaining Joint Equipment at Terminals—Cr. | 259 21 | 306 78 | 301 02 |
| | Total | 17,041 62 | 12,378 52 | 17,368 26 |

Months, November, 1914, to October, 1916—Continued.

| 1916 October. | 1915 Total. | 1916 Total. | Increase. | Decrease. | No. |
|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | |
| 2,454 78 | 24,400 27 | 24,426 50 | 26 23 | ..... | 201 |
| 5,038 24 | 62,462 98 | 66,236 37 | 3,773 39 | ..... | 202 |
| Cr. 688 47 | 30,421 75 | 9,099 40 | ..... | 21,322 35 | 208 |
| Cr. 1,961 24 | 28,845 05 | 32,643 42 | 3,798 37 | ..... | 212 |
| Cr. 3,498 01 | 8,725 46 | 4,732 84 | ..... | 3,992 62 | 214 |
| 679 44 | 7,990 63 | 12,817 12 | 4,826 49 | ..... | 216 |
| Cr. 238 51 | 3,659 33 | 5,935 63 | 2,276 30 | ..... | 218 |
| 9,973 39 | 103,929 64 | 110,425 52 | 6,495 88 | ..... | 220 |
| 460 48 | 3,856 79 | 2,255 12 | ..... | 1,601 67 | 221 |
| 95 13 | 1,572 71 | 1,067 51 | ..... | 505 20 | 225 |
| 1,191 96 | 14,256 41 | 16,258 32 | 2,001 91 | ..... | 227 |
| 173 71 | 1,667 29 | 1,823 16 | 155 87 | ..... | 229 |
| 571 85 | 4,275 90 | 4,181 59 | ..... | 94 31 | 231 |
| 5 60 | 527 67 | 1,184 00 | 656 33 | ..... | 233 |
| 296 66 | 6,986 59 | 6,108 18 | ..... | 878 41 | 235 |
| 850 43 | 3,283 81 | 5,681 91 | 2,398 10 | ..... | 247 |
| ..... | 61 24 | 40 07 | ..... | 21 17 | 249 |
| ..... | 524 27 | 115 68 | ..... | 408 59 | 265 |
| 151 25 | 953 63 | 3,011 59 | 2,057 96 | ..... | 269 |
| 297 14 | 3,802 54 | 3,868 46 | 65 92 | ..... | 271 |
| 214 30 | 15,022 37 | 36,473 71 | 21,451 34 | ..... | 272 |
| 25 00 | 140 05 | 907 69 | 767 64 | ..... | 274 |
| 263 98 | 7,820 20 | 2,984 84 | ..... | 4,835 36 | 275 |
| 56 89 | 708 67 | 742 64 | 33 97 | ..... | 276 |
| ..... | 26 00 | 1 20 | ..... | 24 80 | 277 |
| 165 00 | 2,489 50 | 2,553 00 | 63 50 | ..... | 278 |
| 1,417 76 | 4,724 69 | 6,550 99 | 1,826 30 | ..... | 279 |
| 15,161 24 | 333,686 06 | 349,024 48 | 15,338 42 | ..... | |
| 1,271 40 | 10,166 04 | 12,569 60 | 2,403 56 | ..... | 301 |
| 475 27 | 4,541 39 | 5,915 17 | 1,373 78 | ..... | 302 |
| 7,167 40 | 86,269 58 | 93,935 90 | 7,666 32 | ..... | 308 |
| 1,316 16 | 14,845 56 | 15,034 59 | 189 03 | ..... | 309 |
| 850 92 | 16,208 51 | 34,778 69 | 18,570 18 | ..... | 314 |
| 1,038 55 | 12,327 36 | 12,462 60 | 135 24 | ..... | 315 |
| ..... | ..... | 418 72 | 418 72 | ..... | 316 |
| 4,655 48 | 47,890 37 | 61,449 35 | 23,558 98 | ..... | 317 |
| 1,114 45 | 14,040 84 | 13,373 40 | ..... | 667 44 | 318 |
| ..... | ..... | ..... | ..... | ..... | 319 |
| Cr. 5,106 06 | 53,655 99 | Cr. 8,876 79 | ..... | 62,532 78 | 326 |
| 338 41 | 3,337 44 | 4,060 92 | 723 48 | ..... | 327 |
| ..... | 2 56 | ..... | ..... | 2 56 | 329 |
| 327 36 | 129 14 | 666 05 | 536 91 | ..... | 332 |
| 423 95 | 8,680 89 | 5,268 51 | ..... | 3,412 38 | 333 |
| 77 51 | 883 68 | 1,030 05 | 146 37 | ..... | 334 |
| 17 01 | 578 30 | 874 65 | 296 35 | ..... | 335 |
| ..... | ..... | ..... | ..... | ..... | 336 |
| 313 66 | 2,222 25 | 4,259 37 | 2,037 12 | ..... | 337 |
| 13,654 15 | 271,335 40 | 248,702 04 | ..... | 22,633 36 | |

## Comparative Statement of Earnings and Expenditures by

| No. | Traffic. | 1914 November. | 1915 November. | 1914 December. | 1915 December. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 351 | Superintendence | 794 47 | 908 34 | 876 33 | 851 48 |
| 352 | Outside Agencies | 10 36 | 18 19 | 56 54 | 3 18 |
| 353 | Advertising | 366 67 | 284 66 | 237 63 | 1,256 94 |
| 354 | Traffic Associations | 36 82 | 95 73 | 74 78 | 34 80 |
| 356 | Industrial and Immigration Bureaus. | 143 00 | 118 33 | 130 20 | 137 46 |
| 357 | Insurance | 54 56 | ..... | 11 78 | ..... |
| 358 | Stationery and Printing | 150 15 | 177 85 | 474 99 | 252 61 |
| 359 | Other Expenses | ..... | ..... | ..... | ..... |
| | Total | 1,556 03 | 1,603 10 | 1,862 25 | 2,536 47 |
| | Transportation—Rail Line. | | | | |
| 371 | Superintendence | 1,142 84 | 1,209 76 | 1,415 73 | 1,404 21 |
| 372 | Dispatching Trains | 1,093 73 | 1,208 80 | 1,105 29 | 1,047 90 |
| 373 | Station Employees | 10,816 69 | 10,616 80 | 10,172 59 | 10,624 79 |
| 374 | Weighing, Inspection and Demurrage Bureaus | ..... | 21 16 | 23 55 | 42 38 |
| 376 | Station Supplies and Expenses | 1,365 08 | 1,464 97 | 2,282 37 | 1,937 78 |
| 377 | Yardmasters and Yard Clerks | 940 00 | 919 78 | 950 85 | 925 27 |
| 378 | Yard Conductors and Brakemen | 1,586 53 | 1,567 88 | 1,864 04 | 1,635 35 |
| 379 | Yard Switch and Signal Tenders | 109 82 | 60 80 | 181 64 | 123 20 |
| 380 | Yard Enginemen | 1,009 24 | 1,074 54 | 1,267 97 | 1,108 62 |
| 382 | Fuel for Yard Locomotives | 3,553 81 | 1,310 40 | 2,978 49 | 1,655 34 |
| 385 | Water for Yard Locomotives | 35 02 | 41 03 | 46 11 | 57 81 |
| 386 | Lubricants for Yard Locomotives | 33 32 | 24 50 | 37 95 | 26 56 |
| 387 | Other Supplies for Yard Locomotives | 16 89 | 12 81 | 18 93 | 15 65 |
| 388 | Engine-house Expenses—Yard | 394 93 | 324 49 | 453 56 | 348 10 |
| 389 | Yard Supplies and Expenses | 72 71 | 57 56 | 71 72 | 70 11 |
| 390 | Operating Joint Yards & Terminals—Dr. | 500 00 | 100 00 | 500 00 | 181 61 |
| 391 | " " " —Cr. | 5,059 21 | 3,982 64 | 4,858 71 | 3,969 55 |
| 392 | Train Enginemen | 6,268 99 | 7,359 64 | 6,620 33 | 7,904 57 |
| 394 | Fuel for Train Locomotives | 14,240 49 | 17,868 80 | 16,146 27 | 20,768 17 |
| 397 | Water for Train Locomotives | 1,861 39 | 1,193 47 | 1,756 51 | 1,217 90 |
| 398 | Lubricants for Train Locomotives | 229 57 | 252 90 | 288 12 | 285 45 |
| 399 | Other Supplies for Train Locomotives | 99 70 | 118 09 | 106 56 | 138 38 |
| 400 | Engine-house Expenses—Train | 3,380 64 | 2,896 20 | 3,725 63 | 3,456 78 |
| 401 | Trainmen | 7,709 92 | 8,525 28 | 7,959 40 | 9,108 48 |
| 402 | Train Supplies and Expenses | 2,921 66 | 2,359 61 | 2,001 94 | 2,230 99 |
| 405 | Crossing Protection | 1 05 | ..... | Cr. 1 16 | ..... |
| 410 | Stationery and Printing | 917 71 | 854 06 | 714 66 | 826 70 |
| 411 | Other Expenses | 25 85 | 179 25 | 19 85 | 64 41 |
| 412 | Operating Joint Tracks & Facilities—Dr. | ..... | ..... | ..... | ..... |
| 413 | " " " —Cr. | ..... | 78 85 | ..... | 80 81 |
| 414 | Insurance | 1,200 37 | 164 11 | 684 39 | 136 98 |
| 415 | Clearing Wrecks | 24 21 | 52 39 | ..... | 43 50 |
| 416 | Damage to Property | ..... | ..... | 528 35 | 19 25 |
| 417 | Damage to Live Stock on Right-of-Way. | 25 00 | 100 00 | 50 00 | 75 00 |
| 418 | Loss and Damage—Freight | 265 82 | 377 75 | 484 58 | 85 33 |
| 419 | Loss and Damage—Baggage | 8 00 | 35 00 | 8 08 | 13 50 |
| 420 | Injuries to Persons | 33 33 | 50 00 | 152 00 | 288 48 |
| | Total | 56,735 10 | 58,340 34 | 59,757 59 | 63,818 19 |
| | Miscellaneous Operations. | | | | |
| 441 | Dining and Buffet Service | ..... | 608 32 | ..... | 1,230 03 |
| 447 | Commercial Telegraph Maintenance | ..... | 163 42 | ..... | 214 26 |
| 448 | " " Operation | ..... | 783 15 | ..... | 828 39 |
| 449 | Commercial Telephone Maintenance | ..... | 209 12 | ..... | 325 55 |
| 450 | " " Operation | ..... | 787 08 | ..... | 688 32 |
| | Total | ..... | 2,551 09 | ..... | 3,286 55 |

Months, November, 1914, to October, 1916---Continued.

| 1915 January. | 1916 January. | 1915 February. | 1916 February. | 1915 March. | 1916 March. | No |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 844 13 | 902 35 | 856 79 | 893 79 | 887 96 | 874 63 | 351 |
| 5 02 | 362 03 | 1 04 | 35 74 | 23 78 | 28 74 | 352 |
| 308 00 | 1,348 29 | 36 01 | 299 54 | 93 19 | 141 44 | 353 |
| 56 22 | 52 24 | 14 61 | 36 01 | 86 06 | 55 55 | 354 |
| 567 75 | 154 22 | 268 67 | 138 07 | 231 44 | 129 29 | 356 |
| 11 78 | ..... | 11 78 | ..... | 11 78 | ..... | 357 |
| 63 38 | 194 78 | 62 05 | 498 87 | 274 58 | 212 32 | 358 |
| ..... | ..... | ..... | ..... | ..... | ..... | 359 |
| 1,856 28 | 3,013 91 | 1,250 95 | 1,902 02 | 1,608 79 | 1,441 97 | |
| 1,276 06 | 1,367 59 | 1,183 38 | 1,604 19 | 1,282 21 | 1,432 37 | 371 |
| 1,149 98 | 1,090 04 | 1,082 00 | 1,053 41 | 1,078 15 | 1,059 58 | 372 |
| 10,321 87 | 10,688 58 | 10,090 10 | 11,092 79 | 9,666 99 | 11,307 39 | 373 |
| 30 14 | ..... | 51 23 | 53 87 | 78 09 | 25 63 | 374 |
| 2,021 97 | 2,374 49 | 1,696 26 | 1,882 77 | 1,854 76 | 1,734 69 | 376 |
| 894 26 | 957 71 | 954 83 | 1,004 87 | 1,001 66 | 995 67 | 377 |
| 2,003 93 | 2,314 39 | 1,670 10 | 2,584 43 | 1,834 00 | 3,026 07 | 378 |
| 151 24 | 144 40 | 138 32 | 140 98 | 169 86 | 165 30 | 379 |
| 1,242 31 | 1,538 69 | 1,146 60 | 1,742 86 | 1,215 49 | 1,951 28 | 380 |
| 1,963 07 | 2,684 91 | 1,836 49 | 2,867 95 | 1,884 64 | 3,216 70 | 382 |
| 59 59 | 50 52 | 22 68 | 92 25 | 60 48 | 144 49 | 385 |
| 41 45 | 38 91 | 37 28 | 39 43 | 29 19 | 46 21 | 386 |
| 22 32 | 37 49 | 21 58 | 29 05 | 24 66 | 30 11 | 387 |
| 444 38 | 474 84 | 372 33 | 497 94 | 321 06 | 647 53 | 388 |
| 71 05 | 66 50 | 63 09 | 158 11 | 81 82 | 65 37 | 389 |
| 500 00 | 100 00 | 500 00 | 100 00 | 100 00 | 100 00 | 390 |
| 4,642 30 | 4,680 76 | 3,502 14 | 4,419 78 | 4,007 92 | 4,930 13 | 391 |
| 7,204 96 | 8,987 83 | 6,559 77 | 9,359 90 | 6,163 81 | 12,295 61 | 392 |
| 18,233 70 | 27,264 54 | 17,967 33 | 27,410 21 | 14,853 24 | 37,634 14 | 394 |
| 1,864 25 | 1,890 87 | 1,582 40 | 2,003 39 | 1,323 93 | 2,637 47 | 397 |
| 353 80 | 327 92 | 367 64 | 401 76 | 297 78 | 510 60 | 398 |
| 106 65 | 169 56 | 107 05 | 179 71 | 169 47 | 232 54 | 399 |
| 4,174 14 | 3,889 96 | 3,066 80 | 3,452 41 | 3,281 01 | 3,829 21 | 400 |
| 8,343 46 | 9,994 69 | 7,470 68 | 10,076 87 | 7,546 66 | 12,569 68 | 401 |
| 1,953 12 | 3,185 19 | 3,148 11 | 2,344 28 | 2,554 21 | 1,596 54 | 402 |
| ..... | ..... | 3 93 | ..... | ..... | ..... | 405 |
| 771 04 | 710 83 | 586 24 | 854 01 | 589 61 | 869 92 | 410 |
| 353 98 | 129 26 | 61 85 | 126 26 | 10 35 | 250 28 | 411 |
| ..... | ..... | ..... | ..... | ..... | ..... | 412 |
| ..... | 61 25 | ..... | 89 49 | ..... | 25 00 | 413 |
| 692 79 | 128 04 | 692 79 | 133 35 | 692 79 | 132 93 | 414 |
| 163 99 | 73 56 | 53 30 | 390 90 | 29 54 | 132 28 | 415 |
| 200 00 | 113 80 | 325 00 | ..... | ..... | 77 00 | 416 |
| ..... | 50 00 | ..... | ..... | ..... | ..... | 417 |
| Cr. 3 54 | 170 39 | 199 18 | 301 29 | 859 91 | 51 86 | 418 |
| Cr. 50 56 | 5 00 | ..... | ..... | ..... | 17 81 | 419 |
| 3 22 | 2 00 | ..... | 221 63 | 2 00 | 184 33 | 420 |
| 61,916 32 | 76,280 49 | 59,556 20 | 77,691 60 | 55,049 45 | 94,015 46 | |
| ..... | 2,806 22 | ..... | 1,446 95 | ..... | 1,433 92 | 441 |
| ..... | 131 03 | ..... | 151 38 | ..... | 188 08 | 447 |
| ..... | 816 79 | ..... | 707 95 | ..... | 874 91 | 448 |
| ..... | 339 72 | ..... | 310 25 | ..... | 475 34 | 449 |
| ..... | 882 02 | ..... | 699 79 | ..... | 879 87 | 450 |
| ..... | 4,975 78 | ..... | 3,316 32 | ..... | 3,852 12 | |

## Comparative Statement of Earnings and Expenditures

| No. | Traffic. | 1915 April. | 1916 April. | 1915 May. | 1916 May. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 351 | Superintendence | 918 41 | 858 38 | 913 18 | 853 42 |
| 352 | Outside Agencies | 72 | ..... | 52 | 39 55 |
| 353 | Advertising | 151 77 | 67 27 | 122 57 | 171 63 |
| 354 | Traffic Associations | 45 54 | ..... | 43 02 | 79 36 |
| 356 | Industrial and Immigration Bureaus. | 202 80 | 162 97 | 127 10 | 132 89 |
| 357 | Insurance | 11 78 | ..... | 12 02 | ..... |
| 358 | Stationery and Printing | 105 89 | 148 86 | 103 15 | 243 10 |
| 359 | Other Expenses | ..... | ..... | ..... | ..... |
| | Total | 1,436 91 | 1,237 48 | 1,321 56 | 1,519 95 |
| | **Transportation—Rail Line.** | | | | |
| 371 | Superintendence | 1,139 93 | 1,417 66 | 1,301 46 | 1,340 86 |
| 372 | Dispatching Trains | 1,008 60 | 1,080 00 | 1,104 87 | 1,065 58 |
| 373 | Station Employees | 9,634 20 | 11,645 26 | 9,608 84 | 11,433 90 |
| 374 | Weighing, Inspection and Demurrage Bureaus | 32 85 | 25 19 | 23 42 | 139 48 |
| 376 | Station Supplies and Expenses | 1,156 13 | 1,206 23 | 919 77 | 939 44 |
| 377 | Yardmasters and Yard Clerks | 940 98 | 987 52 | 854 99 | 1,025 21 |
| 378 | Yard Conductors and Brakemen | 1,416 13 | 2,805 07 | 1,150 33 | 2,291 53 |
| 379 | Yard Switch and Signal Tenders | 93 10 | 128 63 | 97 85 | 139 00 |
| 380 | Yard Enginemen | 966 52 | 1,803 41 | 790 19 | 1,537 85 |
| 382 | Fuel for Yard Locomotives | 1,265 81 | 3,640 49 | 1,054 19 | 2,354 20 |
| 385 | Water for Yard Locomotives | 13 94 | 74 14 | 10 22 | 81 11 |
| 386 | Lubricants for Yard Locomotives | 23 62 | 53 36 | 20 41 | 37 33 |
| 387 | Other Supplies for Yard Locomotives. | 13 83 | 30 66 | 21 44 | 25 65 |
| 388 | Engine-house Expenses—Yard | 331 09 | 531 92 | 268 25 | 427 52 |
| 389 | Yard Supplies and Expenses | 49 96 | 65 06 | 27 06 | 41 10 |
| 390 | Operating Joint Yards & Terminals—Dr. | 100 00 | 100 00 | Cr. 1,500 00 | 100 00 |
| 391 | " " " " —Cr. | 3,894 62 | 4,795 98 | 3,628 63 | 4,633 58 |
| 392 | Train Enginemen | 5,589 04 | 12,878 21 | 5,584 44 | 9,432 42 |
| 394 | Fuel for Train Locomotives | 12,073 62 | 37,175 09 | 11,209 87 | 24,468 84 |
| 397 | Water for Train Locomotives | 1,361 81 | 1,733 12 | 928 25 | 1,457 65 |
| 398 | Lubricants for Train Locomotives | 211 50 | 530 97 | 197 11 | 395 03 |
| 399 | Other Supplies for Train Locomotives | 136 18 | 241 46 | 108 85 | 227 26 |
| 400 | Engine-house Expenses—Train | 2,696 50 | 3,771 72 | 2,167 69 | 2,800 06 |
| 401 | Trainmen | 6,746 86 | 12,889 59 | 6,534 05 | 9,964 07 |
| 402 | Train Supplies and Expenses | 2,571 18 | 2,196 14 | 1,512 58 | 1,947 97 |
| 405 | Crossing Protection | ..... | ..... | 96 42 | ..... |
| 410 | Stationery and Printing | 488 99 | 966 22 | 629 90 | 1,330 71 |
| 411 | Other Expenses | 277 21 | 271 26 | 61 75 | 278 26 |
| 412 | Operating Joint Tracks & Facilities—Dr. | ..... | ..... | ..... | ..... |
| 413 | " " " " —Cr. | 93 61 | 72 45 | 25 00 | 77 29 |
| 414 | Insurance | 692 79 | 191 62 | 589 02 | 132 36 |
| 415 | Clearing Wrecks | 14 84 | 176 56 | Cr. 31 | 1,422 35 |
| 416 | Damage to Property | ..... | ..... | ..... | ..... |
| 417 | Damage to Live Stock on Right-of-Way | 10 00 | ..... | 10 27 | ..... |
| 418 | Loss and Damage—Freight | 271 40 | 302 97 | 497 75 | 363 87 |
| 419 | Loss and Damage—Baggage | ..... | ..... | ..... | 4 00 |
| 420 | Injuries to Persons | ..... | 88 01 | ..... | 722 08 |
| | Total | 47,340 38 | 94,139 11 | 42,227 30 | 73,215 82 |
| | **Miscellaneous Operations.** | | | | |
| 441 | Dining and Buffet Service | 2,306 23 | 134 78 | 681 22 | 1,338 02 |
| 447 | Commercial Telegraph Maintenance | ..... | †134 01 | 60 80 | 211 11 |
| 448 | " " Operation | ..... | *805 90 | 758 39 | 954 10 |
| 449 | Commercial Telephone Maintenance. | †2,538 84 | †227 79 | 62 53 | 334 13 |
| 450 | " " Operation | *8,894 85 | *788 89 | 777 94 | 946 89 |
| | Total | 13,739 92 | 2,091 37 | 2,340 88 | 3,784 25 |

by Months, November, 1914, to October, 1916.---Continued.

| 1915 June. | 1916 June. | 1915 July. | 1916 July. | 1915 August. | 1916 August. | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 991 79 | 829 07 | 991 05 | 574 26 | 943 71 | 533 12 | 351 |
| 10 01 | 35 14 | ..... | 192 55 | 1 09 | 760 53 | 352 |
| 168 20 | 536 34 | 206 88 | 503 32 | 356 27 | 2,216 82 | 353 |
| 66 21 | 35 24 | 50 24 | 35 01 | 40 14 | 59 04 | 354 |
| 126 27 | 155 32 | 125 17 | 132 45 | 126 03 | 103 14 | 356 |
| 12 01 | ..... | 12 01 | ..... | 12 01 | ..... | 357 |
| 111 27 | 100 79 | 126 11 | 82 90 | 156 78 | 86 21 | 358 |
| ..... | ..... | ..... | ..... | ..... | ..... | 359 |
| 1,485 76 | 1,691 90 | 1,511 46 | 1,520 49 | 1,636 03 | 3,758 86 | |
| 1,273 81 | 1,380 49 | 1.161 28 | 1,431 99 | 1.150 08 | 1,494 74 | 371 |
| 992 36 | 1,068 73 | 1.372 52 | 1,214 59 | 1,289 44 | 1,172 88 | 372 |
| 9.613 27 | 10,968 35 | 9,730 14 | 11,259 49 | 9,756 12 | 11,624 10 | 373 |
| 27 59 | 20 49 | 20 88 | 4 50 | 24 73 | 48 06 | 374 |
| 665 59 | 1,026 09 | 785 04 | 552 64 | 628 01 | 873 67 | 376 |
| 919 67 | 930 18 | 971 57 | 944 58 | 942 55 | 989 25 | 377 |
| 1.161 70 | 1,426 75 | 1,250 33 | 1,499 76 | 1.275 19 | 1,559 70 | 378 |
| 90 82 | 133 60 | 91 20 | 102 00 | 75 05 | 105 21 | 379 |
| 770 43 | 927 91 | 816 11 | 1,043 61 | 800 50 | 878 35 | 380 |
| 866 17 | 1,671 05 | 1,125 61 | 1.499 54 | 1,046 76 | 1,647 88 | 382 |
| 58 65 | 42 12 | 18 41 | 25 80 | 28 93 | 53 02 | 385 |
| 20 73 | 23 10 | Cr. 26 72 | Cr. 30 61 | 24 59 | 18 73 | 386 |
| 8 10 | 15 92 | 10 32 | 10 29 | 10 23 | 15 05 | 387 |
| 256 52 | 277 99 | 242 16 | 253 00 | 187 61 | 257 04 | 388 |
| 53 82 | 48 67 | 49 30 | 48 26 | 48 69 | 38 71 | 389 |
| 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 100 00 | 390 |
| 3,529 67 | 3,891 82 | 3,874 75 | 3.773 70 | 3,349 93 | 4,140 97 | 391 |
| 5,594 05 | 7,472 18 | 6,391 22 | 7,499 24 | 6,957 45 | 8,421 14 | 392 |
| 11,356 25 | 19,108 15 | 13,086 46 | 17,370 73 | 15,393 43 | 20,465 75 | 394 |
| 1,284 78 | 1,487 59 | 1,268 93 | 1,167 81 | 967 91 | 1,100 53 | 397 |
| 205 02 | 360 71 | Cr. 36 24 | Cr. 4 33 | 265 71 | 314 50 | 398 |
| 85 79 | 200 34 | 93 45 | 137 98 | 113 75 | 167 63 | 399 |
| 1,865 42 | 2,412 06 | 1,845 51 | 2,292 28 | 2,004 94 | 2,348 49 | 400 |
| 6,593 50 | 8,663 94 | 7,463 32 | 9,006 95 | 8,088 19 | 10,027 34 | 401 |
| 1,684 74 | 1,702 67 | 1,973 59 | 2,101 78 | 2,282 02 | 1,492 13 | 402 |
| Cr. 96 42 | ..... | ..... | ..... | ..... | ..... | 405 |
| 650 06 | 701 19 | 581 55 | 832 89 | 786 72 | 942 38 | 410 |
| 90 79 | 242 93 | 61 26 | 221 67 | 105 26 | ..... | 411 |
| ..... | ..... | ..... | ..... | ..... | ..... | 412 |
| 110 01 | 25 00 | 94 48 | 105 58 | 82 66 | 66 41 | 413 |
| 600 93 | 135 31 | 601 20 | 134 24 | 601 04 | 134 47 | 414 |
| 501 25 | 146 41 | 44 35 | 53 39 | 37 85 | 188 39 | 415 |
| ..... | ..... | ..... | ..... | ..... | ..... | 416 |
| 61 64 | 3 04 | 5 88 | ..... | 105 65 | ..... | 417 |
| Cr. 168 21 | Cr. 203 79 | 249 30 | 389 22 | 94 95 | 260 42 | 418 |
| Cr. 119 50 | ..... | 100 00 | 50 | ..... | ..... | 419 |
| 25 00 | 47 52 | 3 00 | 356 53 | 60 61 | 125 84 | 420 |
| 43,454 64 | 58,624 87 | 47,481 70 | 57,641 04 | 51,821 37 | 62,658 02 | |
| 831 61 | Cr. 91 86 | 678 03 | 780 12 | 676 60 | 879 03 | 441 |
| 148 02 | 235 28 | 113 87 | 274 67 | 163 08 | 430 76 | 447 |
| 689 70 | 917 30 | 746 67 | 1,014 23 | 723 99 | 1,219 73 | 448 |
| 253 56 | 371 08 | 207 70 | 408 41 | 283 78 | 603 10 | 449 |
| 646 88 | 825 67 | 646 70 | 731 71 | 668 28 | 806 51 | 450 |
| 2,569 77 | 2,257 47 | 2,392 97 | 3,209 14 | 2,515 73 | 3,939 13 | |

Comparative Statement of Earnings and Expenditures by

| No. | Traffic. | 1915 September. | 1916 September. | 1915 October. |
|---|---|---|---|---|
| | | $ c. | $ c. | $ c. |
| 351 | Superintendence | 838 14 | 544 40 | 867 05 |
| 352 | Outside Agencies | 4 84 | 134 92 | ..... |
| 353 | Advertising | 246 09 | 56 90 | 268 50 |
| 354 | Traffic Associations | 84 53 | 53 39 | 6 39 |
| 356 | Industrial and Immigration Bureaus | 126 39 | 101 76 | 129 95 |
| 357 | Insurance | 12 01 | ..... | 12 01 |
| 358 | Stationery and Printing | 105 17 | 155 98 | 96 03 |
| 359 | Other Expenses | ..... | ..... | Cr. 2 46 |
| | Total | 1,417 17 | 1,047 35 | 1,377 47 |
| | Transportation—Rail Line.. | | | |
| 371 | Superintendence | 1,230 15 | 1,426 99 | 1,116 33 |
| 372 | Dispatching Trains | 1,237 30 | 1,125 35 | 1,283 66 |
| 373 | Station Employees | 9,908 05 | 12,055 56 | 10,339 82 |
| 374 | Weighing, Inspection and Demurrage Bureaus | 19 00 | 24 13 | ..... |
| 376 | Station Supplies and Expenses | 788 40 | 961 92 | 958 21 |
| 377 | Yardmasters and Yard Clerks | 892 08 | 902 06 | 900 51 |
| 378 | Yard Conductors and Brakemen | 1,432 02 | 1,660 32 | 1,404 84 |
| 379 | Yard Switch and Signal Tenders | 88 35 | 102 06 | 95 00 |
| 380 | Yard Enginemen | 984 92 | 1,087 99 | 1,002 57 |
| 382 | Fuel for Yard Locomotives | 1,221 22 | 1,752 46 | 1,387 38 |
| 385 | Water for Yard Locomotives | 30 41 | 30 92 | 53 33 |
| 386 | Lubricants for Yard Locomotives | 25 55 | 28 12 | 27 52 |
| 387 | Other Supplies for Yard Locomotives | 15 09 | 17 40 | 12 39 |
| 388 | Engine-house Expenses—Yard | 293 26 | 275 79 | 316 70 |
| 389 | Yard Supplies and Expenses | 46 59 | 44 05 | 41 38 |
| 390 | Operating Joint Yards & Terminals—Dr. | 100 00 | 100 00 | 100 00 |
| 391 | " " " —Cr. | 3,508 99 | 4,342 74 | 3,824 39 |
| 392 | Train Enginemen | 6,937 86 | 8,407 11 | 7,547 87 |
| 394 | Fuel for Train Locomotives | 15,096 16 | 21,392 08 | 19,598 06 |
| 397 | Water for Train Locomotives | 883 48 | 1,303 34 | 1,125 43 |
| 398 | Lubricants for Train Locomotives | 247 55 | 302 35 | 227 20 |
| 399 | Other Supplies for Train Locomotives | 147 03 | 135 61 | 61 51 |
| 400 | Engine-house Expenses—Train | 2,034 17 | 2,191 61 | 2,409 93 |
| 401 | Trainmen | 8,213 16 | 9,854 66 | 8,893 97 |
| 402 | Train Supplies and Expenses | 1,302 14 | 2,717 02 | 991 87 |
| 405 | Crossing Protection | ..... | ..... | ..... |
| 410 | Stationery and Printing | 758 52 | 872 04 | 608 33 |
| 411 | Other Expenses | 61 26 | 10 40 | 62 26 |
| 412 | Operating Joint Tracks & Facilities—Dr. | ..... | ..... | ..... |
| 413 | " " " —Cr. | 71 69 | 69 89 | 77 00 |
| 414 | Insurance | 600 19 | 134 29 | 600 42 |
| 415 | Clearing Wrecks | 27 61 | 161 32 | Cr. 50 60 |
| 416 | Damage to Property | ..... | ..... | ..... |
| 417 | Damage to Live Stock on Right-of-Way | 78 10 | 3 84 | 63 23 |
| 418 | Loss and Damage—Freight | 177 83 | 196 03 | 71 34 |
| 419 | Loss and Damage—Baggage | 11 14 | ..... | ..... |
| 420 | Injuries to Persons | 156 34 | 130 00 | 7 27 |
| | Total | 51,464 25 | 64,994 19 | 57,356 34 |
| | Miscellaneous Operations. | | | |
| 441 | Dining and Buffet Service | 382 62 | 2,062 77 | 631 27 |
| 447 | Commercial Telegraph Maintenance | 226 73 | 285 68 | 198 25 |
| 448 | " " Operation | 758 00 | 964 73 | 789 37 |
| 449 | Commercial Telephone Maintenance | 365 51 | 415 57 | 311 22 |
| 450 | " " Operation | 742 33 | 756 92 | 736 83 |
| | Total | 2,475 19 | 4,485 67 | 2,666 94 |

Months, November, 1914, to October, 1916---Continued.

| 1916 October. | 1915 Total. | 1916 Total. | Increase. | Decrease. | No. |
|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | |
| 559 70 | 10,723 01 | 9,182 94 | ..... | 1,540 07 | 351 |
| 82 23 | 113 92 | 1,692 80 | 1,578 88 | ..... | 352 |
| 172 35 | 2,561 78 | 7,055 50 | 4,493 72 | ..... | 353 |
| 121 02 | 604 56 | 657 39 | 52 83 | ..... | 354 |
| 121 51 | 2,304 77 | 1,587 41 | ..... | 717 36 | 356 |
| ..... | 185 53 | ..... | ..... | 185 53 | 357 |
| 135 38 | 1,829 55 | 2,289 65 | 460 10 | ..... | 358 |
| ..... | Cr. 2 46 | ..... | 2 46 | ..... | 359 |
| 1,192 19 | 18,320 66 | 22,465 69 | 4,145 03 | ..... | |
| 1,530 57 | 14,673 26 | 17,041 42 | 2,368 16 | ..... | 371 |
| 1,098 43 | 13,707 90 | 12,285 29 | ..... | 1,422 61 | 372 |
| 12,899 70 | 119,658 68 | 136,216 71 | 16,558 03 | ..... | 373 |
| 88 20 | 331 48 | 493 09 | 161 61 | ..... | 374 |
| 1,275 97 | 15,121 59 | 16,230 66 | 1,109 07 | ..... | 376 |
| 965 34 | 11,163 95 | 11,547 44 | 383 49 | ..... | 377 |
| 1,901 81 | 18,049 14 | 24,273 06 | 6,223 92 | ..... | 378 |
| 107 10 | 1,382 25 | 1,452 28 | 70 03 | ..... | 379 |
| 1,175 45 | 12,012 85 | 15,870 56 | 3,857 71 | ..... | 380 |
| 1,794 34 | 20,183 64 | 26,095 26 | 5,911 62 | ..... | 382 |
| 37 91 | 437 77 | 731 12 | 293 35 | ..... | 385 |
| 34 99 | 294 89 | 340 63 | 45 74 | ..... | 386 |
| 19 87 | 195 78 | 259 95 | 64 17 | ..... | 387 |
| 309 95 | 3,881 85 | 4,626 11 | 744 26 | ..... | 388 |
| 55 71 | 677 19 | 759 21 | 82 02 | ..... | 389 |
| 150 00 | 1,200 00 | 1,331 61 | 131 61 | ..... | 390 |
| 11,561 89 | 47,681 26 | 59,123 54 | 11,442 28 | ..... | 391 |
| 8,707 88 | 77,419 79 | 108,725 73 | 31,305 94 | ..... | 392 |
| 20,812 59 | 179,254 88 | 291,739 09 | 112,484 21 | ..... | 394 |
| 1,049 90 | 16,209 07 | 18,243 04 | 2,033 97 | ..... | 397 |
| 313 29 | 2,854 76 | 3,991 15 | 1,136 39 | ..... | 398 |
| 236 53 | 1,335 99 | 2,185 09 | 849 10 | ..... | 399 |
| 3,099 25 | 32,652 38 | 37,440 03 | 4,787 65 | ..... | 400 |
| 10,384 51 | 91,563 17 | 121,066 06 | 29,502 89 | ..... | 401 |
| 1,270 98 | 24,897 16 | 25,145 30 | 248 14 | ..... | 402 |
| ..... | 3 82 | ..... | ..... | 3 82 | 405 |
| 1,371 62 | 8,083 33 | 11,132 57 | 3,049 24 | ..... | 410 |
| 62 83 | 1,191 67 | 1,836 81 | 645 14 | ..... | 411 |
| ..... | ..... | ..... | ..... | ..... | 412 |
| 71 49 | 554 45 | 823 51 | 269 06 | ..... | 413 |
| 134 03 | 8,248 72 | 1,691 73 | ..... | 6,556 99 | 414 |
| 457 78 | 846 03 | 3,298 83 | 2,452 80 | ..... | 415 |
| ..... | 1,053 35 | 210 05 | ..... | 843 30 | 416 |
| 50 00 | 409 77 | 281 88 | ..... | 127 89 | 417 |
| 284 01 | 3,000 31 | 2,579 35 | ..... | 420 96 | 418 |
| ..... | Cr. 42 84 | 75 81 | 118 65 | ..... | 419 |
| 592 46 | 442 77 | 2,808 88 | 2,366 11 | ..... | 420 |
| 60,639 62 | 634,160 64 | 842,058 75 | 207,898 11 | ..... | |
| 1,768 82 | 6,187 58 | 14,397 12 | 8,209 54 | ..... | 441 |
| 556 63 | ..... | †2,976 31 | ..... | ..... | 447 |
| 961 54 | †4,933 89 | *10,848 72 | †2,821 49 | ..... | 448 |
| 759 01 | ..... | †4,779 07 | *2,830 46 | ..... | 449 |
| 768 00 | *17,579 93 | *9,561 67 | ..... | ..... | 450 |
| 4,814 00 | 28,701 40 | 42,562 89 | 13,861 49 | ..... | |

## Comparative Statement of Earnings and Expenditures by

| No. | General. | 1914 November. | 1915 November. | 1914 December. | 1915 December. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 451 | Salaries and Expenses of General Officers | 1,212 57 | 1,624 04 | 2,597 18 | 2,705 63 |
| 452 | Salaries and Expenses of Clerks and Attendants | 3,058 65 | 2,854 33 | 3,522 51 | 3,166 35 |
| 453 | General Office Supplies and Expenses | 346 92 | 414 96 | 284 77 | 744 07 |
| 454 | Law Expenses | 400 00 | 400 00 | 400 50 | 588 90 |
| 455 | Insurance | 223 01 | 90 | 50 29 | 1 93 |
| 457 | Pensions | ..... | 183 50 | ..... | 1,451 49 |
| 458 | Stationery and Printing | 195 16 | 192 14 | 270 18 | 434 96 |
| 459 | Valuation Expenses | ..... | ..... | ..... | ..... |
| 460 | Other Expenses | 5 60 | 11 05 | 11 70 | 35 05 |
| 461 | General Joint Facilities—Dr. | ..... | ..... | ..... | ..... |
| 462 | " " " —Cr. | 45 32 | 7 42 | 43 24 | 7 28 |
| | Total | 5,396 59 | 5,673 50 | 7,093 89 | 9,121 10 |

## Comparative Statement of Earnings and Expenditures by

| No. | General. | 1915 April. | 1916 April. | 1915 May. | 1916 May. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 451 | Salaries and Expenses of General Officers | 1,443 98 | 1,465 02 | 1,728 08 | 1,503 19 |
| 452 | Salaries and Expenses of Clerks and Attendants | 2,991 71 | 2,874 43 | 2,955 02 | 2,835 40 |
| 453 | General Office Supplies and Expenses | 460 08 | 469 45 | 342 55 | 729 78 |
| 454 | Law Expenses | 400 00 | 400 00 | 400 00 | 425 00 |
| 455 | Insurance | 50 29 | 78 95 | 55 80 | 1 87 |
| 457 | Pensions | 320 00 | 357 46 | 320 00 | 569 70 |
| 458 | Stationery and Printing | 160 73 | 328 61 | 316 97 | 346 87 |
| 459 | Valuation Expenses | ..... | ..... | ..... | ..... |
| 460 | Other Expenses | 110 30 | 11 05 | ..... | 52 50 |
| 461 | General Joint Facilities—Dr. | ..... | ..... | ..... | ..... |
| 462 | " " " —Cr. | 47 32 | 7 18 | 47 68 | 7 31 |
| | Total | 5,889 77 | 5,977 79 | 6,070 74 | 6,457 00 |

## Comparative Statement of Earnings and Expenditures by

| No. | General. | 1915 September. | 1916 September. | 1915 October. |
|---|---|---|---|---|
| | | $ c. | $ c. | $ c. |
| 451 | Salaries and Expenses of General Officers | 2,424 06 | 2,381 00 | 1,401 00 |
| 452 | Salaries and Expenses of Clerks and Attendants | 2,675 25 | 3,500 85 | 2,607 04 |
| 453 | General Office Supplies and Expenses | 433 20 | 498 47 | 350 89 |
| 454 | Law Expenses | 406 25 | 400 00 | 416 49 |
| 455 | Insurance | 55 77 | 1 87 | 55 77 |
| 457 | Pensions | 165 00 | 1,175 74 | ..... |
| 458 | Stationery and Printing | 210 96 | 215 83 | 97 82 |
| 459 | Valuation Expenses | ..... | ..... | ..... |
| 460 | Other Expenses | 100 77 | 3,193 88 | 11 05 |
| 461 | General Joint Facilities —Dr. | ..... | ..... | ..... |
| 462 | " " " —Cr. | 7 20 | 8 66 | 7 28 |
| | Total | 6,464 06 | 11,358 98 | 4,932 78 |

Months, November, 1914, to October, 1916---Continued.

| 1915 January. | 1916 January. | 1915 February. | 1916 February. | 1915 March. | 1916 March. | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 1,408 98 | 1,606 71 | 1,336 74 | 1 520 65 | 2,445 14 | 2,575 01 | 451 |
| 3,167 81 | 2,873 21 | 3,309 55 | 2,760 65 | 2,996 90 | 2,793 41 | 452 |
| 778 41 | 438 15 | 384 40 | 405 88 | 426 69 | 456 93 | 453 |
| 555 00 | 400 00 | 400 00 | 400 00 | 400 00 | 400 00 | 454 |
| 50 29 | 1 87 | 50 29 | 1 87 | 54 99 | 6 07 | 455 |
| 167 45 | 1,245 70 | 295 00 | 676 55 | 399 61 | 112 75 | 457 |
| 389 09 | 192 37 | 193 11 | 463 50 | 290 27 | 194 85 | 458 |
| ..... | ..... | ..... | ..... | ..... | ..... | 459 |
| 2 40 | 11 05 | 25 00 | 11 05 | 80 00 | 11 05 | 460 |
| ..... | ..... | ..... | ..... | ..... | ..... | 461 |
| 42 80 | 7 64 | 42 28 | 7 14 | 45 94 | 7 26 | 462 |
| 6,476 63 | 6,761 42 | 5,951 81 | 6,233 01 | 7,047 66 | 6,542 81 | |

Months, November, 1914, to October, 1916---Continued.

| 1915 June. | 1916 June. | 1915 July. | 1916 July. | 1915 August. | 1916 August. | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 2,464 74 | 2,180 55 | 1,510 60 | 1,521 31 | 1,400 27 | 1,544 39 | 451 |
| 2,565 63 | 2,903 32 | 2,532 84 | 3,042 40 | 2,654 26 | 3,339 54 | 452 |
| 544 98 | 384 50 | 550 52 | 410 26 | 367 22 | 366 74 | 453 |
| 541 00 | 650 65 | 400 00 | 400 00 | 400 00 | 400 00 | 454 |
| 55 77 | 1 87 | 55 84 | 1 87 | 55 77 | 1 87 | 455 |
| 545 00 | 782 98 | 545 00 | 1,000 03 | 165 00 | 1,100 33 | 457 |
| 185 89 | 188 24 | 360 89 | 495 28 | 377 66 | 235 01 | 458 |
| ..... | ..... | ..... | ..... | ..... | ..... | 459 |
| 23 76 | 624 80 | 11 05 | 907 01 | 67 42 | 497 34 | 460 |
| ..... | ..... | ..... | ..... | ..... | ..... | 461 |
| 2,695 42 | 7 32 | 8 21 | 7 22 | 7 26 | 6 29 | 462 |
| 4,231 35 | 7,709 59 | 5,958 53 | 7,770 94 | 5,480 34 | 7,478 93 | |

Months, November, 1914, to October, 1916---Concluded.

| 1916 October. | 1915 Total. | 1916 Total. | Increase. | Decrease. | No. |
|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | |
| 1,481 32 | 21,373 34 | 22,108 82 | 735 48 | ..... | 451 |
| 3,550 01 | 35,037 17 | 36,493 90 | 1,456 73 | ..... | 452 |
| 809 07 | 5,270 63 | 6,128 26 | 857 63 | ..... | 453 |
| 562 89 | 5,119 24 | 5,427 44 | 308 20 | ..... | 454 |
| 1 87 | 813 88 | 102 81 | ..... | 711 07 | 455 |
| 870 46 | 2,922 06 | 9,526 69 | 6,604 63 | ..... | 457 |
| 401 17 | 3,048 73 | 3,688 83 | 640 10 | ..... | 458 |
| ..... | ..... | ..... | ..... | ..... | 459 |
| 2,564 30 | 449 05 | 7,930 13 | 7,481 08 | ..... | 460 |
| ..... | ..... | ..... | ..... | ..... | 461 |
| 8 42 | 3,039 95 | 89 14 | ..... | 2,950 81 | 462 |
| 10,232 67 | 70,994 15 | 91,317 74 | 20,323 59 | ..... | |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road

November, 1915

| | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 84,030 | 40,760 | 43,270 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 768,174 | 552,109 | 216,065 | 13.5 | 5.0 | ..... | ..... | ..... |
| " " Empty | 237,256 | 237,256 | ..... | 5.8 | ..... | ..... | ..... | ..... |
| Total Car Miles | 1,005,430 | 789,365 | 216,065 | 19.3 | 5.0 | ..... | ..... | ..... |
| REVENUE. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 148,604 21 | 98,293 74 | 50,310 47 | 2 41.1 | 1 16.3 | 452 37 | 299 22 | 153 15 |
| Incidental to transportation | 5,862 86 | 3,702 12 | 2,160 74 | 09.1 | 05.0 | 17 85 | 11 27 | 6 58 |
| Total | 154,467 07 | 101,995 86 | 52,471 21 | 2 50.2 | 1 21.3 | 470 22 | 310 49 | 159 73 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 36,819 46 | 20,508 44 | 16,311 02 | 50.3 | 37.7 | 112 08 | 62 43 | 49 65 |
| " " Equipment | 23,272 14 | 10,680 80 | 12,591 34 | 26.2 | 29.1 | 70 84 | 32 51 | 38 33 |
| Traffic Expenses | 1,603 10 | 1,151 28 | 451 82 | 02.8 | 01.0 | 4 88 | 3 50 | 1 38 |
| Transportation Expenses | 58,340 34 | 36,499 63 | 21,840 71 | 89.5 | 50.5 | 177 60 | 111 11 | 66 49 |
| Miscellaneous Operations | 2,551 09 | 1,286 11 | 1,264 98 | 03.2 | 02.9 | 7 77 | 3 92 | 3 85 |
| General Expenses | 5,673 50 | 3,245 24 | 2,428 26 | 08.0 | 05.6 | 17 27 | 9 88 | 7.39 |
| Transportation for Investment—*Cr.* | 201 12 | 201 12 | ..... | 00.5 | ..... | 61 | 61 | ..... |
| Total Operating Expenses | 128,058 51 | 73,170 38 | 54,888 13 | 1 79.5 | 1 26.8 | 389 83 | 222 74 | 167 09 |
| Hire of Equipment | 6,744 31 | 4,939 16 | 1,805 15 | 12.1 | 04.2 | 20 53 | 15 04 | 5 49 |
| Total Expenses | 134,802 82 | 78,109 54 | 56,693 28 | 1 91.6 | 1 31.0 | 410 36 | 237 78 | 172 58 |
| Balance | 19,664 25 | 23,886 32 | Dr. 4,222 07 | 58.6 | Dr. 09.7 | 59 86 | 72 71 | Dr. 12 85 |
| Income unallocated | 1,791 75 | ..... | ..... | ..... | ..... | 5 45 | ..... | ..... |
| Net Result | 21,456 00 | ..... | ..... | ..... | ..... | 65.31 | ..... | ..... |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

December, 1915.

| —— | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 89,553 | 44,006 | 45,547 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 818,872 | 584,709 | 234,163 | 13.3 | 5.1 | ..... | ..... | ..... |
| " " Empty | 239,327 | 239,327 | ..... | 5.4 | ..... | ..... | ..... | ..... |
| Total Car Miles | 1,058,199 | 824,036 | 234,163 | 18.7 | 5.1 | ..... | ..... | ..... |
| REVENUE. | | | | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 154,810 69 | 103,244 87 | 51,565 82 | 2 34.6 | 1 13.2 | 471 26 | 314 29 | 156 97 |
| Incidental to transportation | 6,105 58 | 3,975 78 | 2,129 80 | 09. | 04.7 | 18 59 | 12 10 | 6 49 |
| Total | 160,916 27 | 107,220 65 | 53,695 62 | 2 43.6 | 1 17.9 | 489 85 | 326 39 | 163 46 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 29,981 46 | 17,119 41 | 12,862 05 | 38.9 | 28.2 | 91 27 | 52 12 | 39 15 |
| " " " Equipment | 21,829 87 | 9,611 63 | 12,218 24 | 21.8 | 26.8 | 66 45 | 29 26 | 37 19 |
| Traffic Expenses | 2,536 47 | 1,277 88 | 1,258 59 | 02.9 | 02.8 | 7 72 | 3 89 | 3 83 |
| Transportation Expenses | 63,818 19 | 40,671 23 | 23,146 96 | 92.4 | 50.8 | 194 27 | 123 81 | 70 46 |
| Miscellaneous Operations | 3,286 55 | 1,371 01 | 1,915 54 | 03.1 | 04.2 | 10 01 | 4 17 | 5 84 |
| General Expenses | 9,121 10 | 5,262 87 | 3,858 23 | 12.0 | 08.5 | 27 77 | 16 02 | 11 75 |
| Transportation for Investment—*Cr.* | 136 95 | 136 95 | ..... | 00.3 | ..... | 42 | 42 | ..... |
| Total Operating Expenses | 130,436 69 | 75,177 08 | 55,259 61 | 1 70.8 | 1 21.3 | 397 07 | 228 85 | 168 22 |
| Hire of Equipment | 6,476 22 | 5,236 24 | 1,239 98 | 11.9 | 02.7 | 19 71 | 15 94 | 3 77 |
| Total Expenses | 136,912 91 | 80,413 32 | 56,499 59 | 1 82.7 | 1 24.0 | 416 78 | 244 79 | 171 99 |
| Balance | 24,003 36 | 26,807 33 | Dr. 2,803 97 | 60.9 | Dr. 06.1 | 73 07 | 81 60 | Dr. 8 53 |
| Income unallocated | 2,563 94 | ..... | ..... | ..... | ..... | 7 80 | ..... | ..... |
| Net Result | 26,567 30 | ..... | ..... | ..... | ..... | 80 87 | ..... | ..... |

Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

January, 1916.

| —— | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 89,263 | 46,033 | 43,230 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 854,240 | 651,732 | 202,508 | 14.2 | 4.7 | ..... | ..... | ..... |
| " " Empty | 227,666 | 227,666 | ..... | 4.9 | ..... | ..... | ..... | ..... |
| Total Car Miles | 1,081,906 | 879,398 | 202,508 | 19.1 | 4.7 | ..... | ..... | ..... |
| REVENUE. | | | | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 139,236 13 | 94,046 09 | 45,190 04 | 2 04 | 1 05 | 423 85 | 286 29 | 137 56 |
| Incidental to transportation | 8,881 44 | 4,500 84 | 4,380 60 | 10 | 10 | 27 04 | 13 70 | 13 34 |
| Total | 148,117 57 | 98,546 93 | 49,570 64 | 2 14 | 1 15 | 450 89 | 299 99 | 150 90 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 31,501 12 | 18,900 68 | 12,600 44 | 41 | 29 | 95 89 | 57 53 | 38 36 |
| " " Equipment | 23,232 31 | 11,852 12 | 11,380 19 | 26 | 27 | 70 72 | 36 08 | 34 64 |
| Traffic Expenses | 3,013 91 | 1,161 59 | 1,852 32 | 03 | 04 | 9 18 | 3 54 | 5 64 |
| Transportation Expenses | 76,280 49 | 50,743 58 | 25,536 91 | 1 10 | 59 | 232 21 | 154 48 | 77 73 |
| Miscellaneous Operations | 4,975 78 | 1,475 30 | 3,500 48 | 03 | 08 | 15 15 | 4 49 | 10 66 |
| General Expenses | 6,761 42 | 4,090 66 | 2,670 76 | 09 | 06 | 20 58 | 12 45 | 8 13 |
| Transportation for Investment—*Cr.* | 35 86 | 35 86 | ..... | ..... | ..... | 11 | 11 | ..... |
| Total Operating Expenses | 145,729 17 | 88,188 07 | 57,541 10 | 1 92 | 1 33 | 443 62 | 268 46 | 175 16 |
| Hire of Equipment | 8,925 84 | 7,489 27 | 1,436 57 | 16 | 03 | 27 17 | 22 79 | 4 38 |
| Total Expenses | 154,655 01 | 95,677 34 | 58,977 67 | 2 08 | 1 36 | 470 79 | 291 25 | 179 54 |
| Balance | Dr.6,537 44 | 2,869 59 | Dr.9,407 03 | 06 | Dr. 21 | Dr. 19 90 | 8 74 | Dr. 28 64 |
| Income unallocated | 10,172 08 | ..... | ..... | ..... | ..... | 30 96 | ..... | ..... |
| Net Result | 3,634 64 | ..... | ..... | ..... | ..... | 11 06 | ..... | ..... |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

February, 1916.

| | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 89,851 | 48,664 | 41,187 | | | | | |
| Car Miles—Loaded | 946,929 | 755,748 | 191,181 | 15.5 | 4.6 | | | |
| " " Empty | 233,367 | 233,367 | | 4.8 | | | | |
| Total Car Miles | 1,180,296 | 989,115 | 191,181 | 20.3 | 4.6 | | | |
| REVENUE. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 144,254 30 | 107,785 07 | 36,469 23 | 2 21 | 89 | 439 12 | 328 11 | 111 01 |
| Incidental to transportation | 6,334 49 | 3,737 17 | 2,597 32 | 08 | 06 | 19 29 | 11 38 | 7 91 |
| Total | 150,588 79 | 111,522 24 | 39,066 55 | 2 29 | 95 | 458 41 | 339 49 | 118 92 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 35,310 60 | 22,192 71 | 13,117 89 | 45 | 32 | 107 49 | 67 56 | 39 93 |
| " " Equipment | 24,491 27 | 13,465 14 | 11,026 13 | 28 | 27 | 74 55 | 40 99 | 33 56 |
| Traffic Expenses | 1,902 02 | 1,443 61 | 458 41 | 03 | 01 | 5 79 | 4 39 | 1 40 |
| Transportation Expenses | 77,691 60 | 54,514 31 | 23,177 29 | 1 12 | 56 | 236 50 | 165 95 | 70 55 |
| Miscellaneous Operations | 3,316 32 | 1,396 42 | 1,919 90 | 03 | 05 | 10 10 | 4 25 | 5 85 |
| General Expenses | 6,233 01 | 4,063 92 | 2,169 09 | 08 | 05 | 18 97 | 12 37 | 6 60 |
| Transportation for Investment—*Cr.* | 25 32 | 25 32 | | | | 07 | 07 | |
| Total Operating Expenses | 148,919 50 | 97,050 79 | 51,868 71 | 1 99 | 1 26 | 453 33 | 295 44 | 157 89 |
| Hire of Equipment | 11,119 16 | 9,796 91 | 1,322 25 | 20 | 03 | 33 85 | 29 82 | 4 03 |
| Total Expenses | 160,038 66 | 106,847 70 | 53,190 96 | 2 19 | 1 29 | 487 18 | 325 26 | 161 92 |
| Balance | Dr. 9,449 87 | 4,674 54 | Dr. 14,124 41 | 10 | Dr. 34 | Dr. 28 77 | 14 23 | Dr. 43 00 |
| Income unallocated | 1,516 85 | | | | | 4 62 | | |
| Net Result | Dr. 7,933 02 | | | | | Dr. 24 15 | | |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

March, 1916.

| — | Total | Freight | Passenger | Per Train Mile | | Per Mile of Road | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight | Passenger | Total | Freight | Passenger |
| Train Miles | 110,881 | 65,210 | 45,671 | | | | | |
| Car Miles—Loaded | 1,328,514 | 1,113,275 | 215,239 | 17.1 | 4.7 | | | |
| " " Empty | 233,949 | 233,949 | | 3.6 | | | | |
| Total Car Miles | 1,562,463 | 1,347,224 | 215,239 | 20.7 | 4.7 | | | |
| REVENUE. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 187,127 43 | 142,667 04 | 44,460 39 | 2 18.8 | 97.3 | 569 64 | 434 30 | 135 34 |
| Incidental to transportation | 6,776 17 | 4,328 09 | 2,448 08 | 06.6 | 05.4 | 20 63 | 13 18 | 7 45 |
| Total | 193,903 60 | 146,995 13 | 46,908 47 | 2 25.4 | 1 02.7 | 590 27 | 447 48 | 142 79 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 31,221 35 | 21,261 74 | 9,959 61 | 32.6 | 21.8 | 95 04 | 64 72 | 30 32 |
| " " Equipment | 30,903 33 | 16,323 12 | 14,580 21 | 25 | 31.9 | 94 07 | 49 69 | 44 38 |
| Traffic Expenses | 1,441 97 | 1,144 31 | 297 66 | 01.8 | 00.7 | 4 39 | 3 48 | 91 |
| Transportation Expenses | 94,015 46 | 70,815 57 | 23,199 89 | 1 08.6 | 50.8 | 286 20 | 215 57 | 70 63 |
| Miscellaneous Operations | 3,852 12 | 1,842 67 | 2,009 45 | 02.8 | 04.4 | 11 72 | 5 61 | 6 11 |
| General Expenses | 6,542 81 | 4,514 54 | 2,028 27 | 06.9 | 04.4 | 19 92 | 13 75 | 6 17 |
| Transportation for Investment—*Cr.* | 30 88 | 30 88 | | | | 09 | 09 | |
| Total Operating Expenses | 167,946 16 | 115,871 07 | 52,075 09 | 1 77.7 | 1 14 | 511 25 | 352 73 | 158 52 |
| Hire of Equipment | 16,690 23 | 14,991 68 | 1,698 55 | 23 | 03.7 | 50 81 | 45 64 | 5 17 |
| Total Expenses | 184,636 39 | 130,862 75 | 53,773 64 | 2 00.7 | 1 17.7 | 562 06 | 398 37 | 163 69 |
| Balance | 9,267 21 | 16,132 38 | Dr. 6,865 17 | 24.7 | Dr. 15 | 28 21 | 49 11 | Dr. 20 90 |
| Income unallocated | 8,333 56 | | | | | 25.37 | | |
| Net Result | 17,600 77 | | | | | 53.58 | | |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

April, 1916.

| | Total | Freight | Passenger | Per Train Mile | | Per Mile of Road | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight | Passenger | Total | Freight | Passenger |
| Train Miles | 120,530 | 79,627 | 40,903 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 1,528,996 | 1,313,224 | 215,772 | 16.5 | 5.3 | ..... | ..... | ..... |
| " " Empty | 430,975 | 430,975 | ..... | 5.4 | ..... | ..... | ..... | ..... |
| Total Car Miles | 1,959,971 | 1,744,199 | 215,772 | 21.9 | 5.3 | ..... | ..... | ..... |
| REVENUE. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 226,708 36 | 174,593 27 | 52,115 09 | 2 19.3 | 1 27.4 | 690 13 | 531 49 | 158 64 |
| Incidental to transportation | 6,840 83 | 5,137 90 | 1,702 93 | 06.4 | 04.2 | 20 83 | 15 64 | 5 19 |
| Total | $233,549 19 | 179,731 17 | 53,818 02 | 2 25.7 | 1 31.6 | 710 96 | 547 13 | 163 83 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 28,388 98 | 19,332 90 | 9,056 08 | 24.3 | 22.1 | 86 42 | 58 85 | 27 57 |
| " " Equipment | 25,101 54 | 14,917 20 | 10,184 34 | 18.7 | 24.9 | 76 41 | 45 41 | 31 00 |
| Traffic Expenses | 1,237 48 | 1,059 91 | 177 57 | 01.3 | 00.4 | 3 77 | 3 23 | 54 |
| Transportation Expenses | 94,139 11 | 73,298 87 | 20,840 24 | 92.1 | 51 | 286 57 | 223 13 | 63 44 |
| Miscellaneous Operations | 2,091 37 | 1,506 57 | 584 80 | 01.9 | 01.4 | 6 37 | 4 59 | 1 78 |
| General Expenses | 5,977 79 | 4,357 81 | 1,619 98 | 05.4 | 04 | 18 20 | 13 27 | 4 93 |
| Transportation for Investment—*Cr.* | 35 95 | 35 95 | ..... | ..... | ..... | 11 | 11 | ..... |
| Total Operating Expenses | 156,900 32 | 114,437 31 | 42,463 01 | 1 43.7 | 1 03.8 | 477 63 | 348 37 | 129 26 |
| Hire of Equipment | 18,107 91 | 16,304 03 | 1,803 88 | 20.5 | 04.4 | 55 12 | 49 63 | 5 49 |
| Total Expenses | 175,008 23 | 130,741 34 | 44,266 89 | 1 64.2 | 1 08.2 | 532 75 | 398 00 | 134 75 |
| Balance | 58,540 96 | 48,989 83 | 9,551 13 | 61.5 | 23.4 | 178 21 | 149 13 | 29 08 |
| Income unallocated | 2,169 10 | ..... | ..... | ..... | ..... | 6 60 | ..... | ..... |
| Net Result | 60,710 06 | ..... | ..... | ..... | ..... | 184 81 | ..... | ..... |

Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

May, 1916.

| — | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 100,247 | 52,817 | 47,430 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 1,039,614 | 794,237 | 245,377 | 15. | 5.2 | ..... | ..... | ..... |
| " " Empty | 329,596 | 329,596 | ..... | 6.3 | ..... | ..... | ..... | ..... |
| Total Car Miles | 1,369,210 | 1,123,833 | 245,377 | 21.3 | 5.2 | ..... | ..... | ..... |
| REVENUE. | | | | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 192,425 87 | 130,417 33 | 62,008 54 | 2 46.9 | 1 30.7 | 585 77 | 397 01 | 188 76 |
| Incidental to transportation | 7,909 01 | 4,771 12 | 3,137 89 | 09 | 06.6 | 24 08 | 14 52 | 9 56 |
| Total | 200,334 88 | 135,188 45 | 65,146 43 | 2 55.9 | 1 37.3 | 609 85 | 411 53 | 198 32 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 33,152 63 | 20,355 71 | 12,796 92 | 38.5 | 27 | 100 92 | 61 96 | 38 96 |
| " " Equipment | 22,250 15 | 12,126 14 | 10,124 01 | 23 | 21.3 | 67 73 | 36 91 | 30 82 |
| Traffic Expenses | 1,519 95 | 1,192 74 | 327 21 | 02.3 | 00.7 | 4 63 | 3 63 | 1 00 |
| Transportation Expenses | 73,215 82 | 50,670 05 | 22,545 77 | 95.9 | 47.5 | 222 88 | 154 25 | 68 63 |
| Miscellaneous Operations | 3,784 25 | 1,658 54 | 2,125 71 | 03.1 | 04.5 | 11 52 | 5 05 | 6 47 |
| General Expenses | 6,457 00 | 4,145 39 | 2,311 61 | 07.8 | 04.9 | 19 65 | 12 62 | 7 03 |
| Transportation for Investment—*Cr.* | 368 95 | 368 95 | ..... | 00.7 | ..... | 1 12 | 1 12 | ..... |
| Total Operating Expenses | 140,010 85 | 89,779 62 | 50,231 23 | 1 69.9 | 1 05.9 | 426 21 | 273 30 | 152 91 |
| Hire of Equipment | 9,594 18 | 7,019 91 | 2,574 27 | 13.3 | 05.4 | 29 21 | 21 37 | 7 84 |
| Total Expenses | 149,605 03 | 96,799 53 | 52,805 50 | 1 83.2 | 1 11.3 | 455 42 | 294 67 | 160 75 |
| Balance | 50,729 85 | 38,388 92 | 12,340 93 | 72.7 | 26 | 154 43 | 116 86 | 37 57 |
| Income unallocated | 2,570 98 | ..... | ..... | ..... | ..... | 7 83 | ..... | ..... |
| Net Result | 53,300 83 | ..... | ..... | ..... | ..... | 162 26 | ..... | ..... |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

June 1916.

| | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 87,536 | 42,089 | 45,447 | | | | | |
| Car Miles—Loaded | 851,508 | 601,850 | 249,658 | 14.3 | 5.5 | | | |
| " " Empty | 204,213 | 204,213 | | 4.9 | | | | |
| Total Car Miles | 1,055,721 | 806,063 | 249,658 | 19.2 | 5.5 | | | |
| REVENUE. | | | | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 158,813 52 | 92,617 53 | 66,195 99 | 2 20.1 | 1 45.6 | 483 45 | 281 94 | 201 51 |
| Incidental to transportation | 6,532 97 | 3,774 83 | 2,758 14 | 08.9 | 06.1 | 19 88 | 11 49 | 8 39 |
| Total | 165,346 49 | 96,392 36 | 68,954 13 | 2 29 | 1 51.7 | 503 33 | 293 43 | 209 90 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 37,065 95 | 18,162 32 | 18,903 63 | 43.1 | 41.6 | 112 83 | 55 29 | 57 54 |
| " " Equipment | 21,341 88 | 9,402 82 | 11,939 06 | 22.3 | 26.3 | 64 97 | 28 62 | 36 35 |
| Traffic Expenses | 1,691 90 | 1,065 53 | 626 37 | 02.5 | 01.4 | 5 15 | 3 24 | 1 91 |
| Transportation Expenses | 58,624 87 | 38,010 63 | 20,614 24 | 90.3 | 45.4 | 178 46 | 115 71 | 62 75 |
| Miscellaneous Operations | 2,257 47 | 1,369 66 | 887 81 | 03.3 | 01.9 | 6 87 | 4 17 | 2 70 |
| General Expenses | 7,709 59 | 4,332 79 | 3,376 80 | 10.3 | 07.4 | 23 47 | 13 19 | 10 28 |
| Transportation for Investment—*Cr.* | 226 53 | 226 53 | | 00.5 | | 69 | 69 | |
| Total Operating Expenses | 128,465 13 | 72,117 22 | 56,347 91 | 1 71.3 | 1 24 | 391 06 | 219 53 | 171 53 |
| Hire of Equipment | 7,417 53 | 5,122 82 | 2,294 71 | 12.2 | 05 | 22 58 | 15 59 | 6 99 |
| Total Expenses | 135,882 66 | 77,240 04 | 58,642 62 | 1 83.5 | 1 29 | 413 64 | 235 12 | 178 52 |
| Balance | 29,463 83 | 19,152 32 | 10,311 51 | 45.5 | 22.7 | 89 69 | 58 31 | 31 38 |
| Income unallocated | 2,712 66 | | | | | 8 25 | | |
| Net Result | 32,176 49 | | | | | 97 94 | | |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

July, 1916.

| — | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 87,169 | 41,185 | 45,984 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 792,322 | 563,324 | 228,998 | 13.7 | 5.0 | ..... | ..... | ..... |
| " " Empty | 170,057 | 170,057 | ..... | 4.1 | ..... | ..... | ..... | ..... |
| Total Car Miles | 962,379 | 733,381 | 228,998 | 17.8 | 5.0 | ..... | ..... | ..... |
| REVENUE. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 150,103 72 | 78,919 01 | 71,184 71 | 1 91.6 | 1 54.8 | 456 94 | 240 24 | 216 70 |
| Incidental to transportation | 8,013 07 | 3,891 96 | 4,121 11 | 9.5 | 9.0 | 24 39 | 11 85 | 12 54 |
| Total | 158,116 79 | 82,810 97 | 75,305 82 | 2 01.1 | 1 63.8 | 481 33 | 252 09 | 229 24 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 20,808 64 | 11,236 67 | 9,571 97 | 27.3 | 20.9 | 63 34 | 34 20 | 29 14 |
| " " Equipment | 12,603 59 | 4,703 06 | 7,900 53 | 11.4 | 17.2 | 38 37 | 14 32 | 24 05 |
| Traffic Expenses | 1,520 49 | 631 69 | 888 80 | 01.5 | 01.9 | 4 63 | 1 92 | 2 71 |
| Transportation Expenses | 57,641 04 | 36,321 06 | 21,319 98 | 88.2 | 46.3 | 175 47 | 110 57 | 64 90 |
| Miscellaneous Operations | 3,209 14 | 1,277 66 | 1,931 48 | 03.1 | 04.2 | 9 77 | 3 89 | 5 88 |
| General Expenses | 7,770 94 | 4,398 35 | 3,372 59 | 10.7 | 07.3 | 23 65 | 13 39 | 10 26 |
| Transportation for Investment—*Cr.* | 108 84 | 108 84 | ..... | 00.3 | ..... | 33 | 33 | ..... |
| Total Operating Expenses | 103,445 00 | 58,459 65 | 44,985 35 | 1 41.9 | 97.8 | 314 90 | 177 96 | 136 94 |
| Hire of Equipment | 205 65 | Cr. 1,445 02 | 1,650 67 | Cr. 03.5 | 03.6 | 63 | Cr. 4 40 | 5 03 |
| Total Expenses | 103,650 65 | 57,014 63 | 46,636 02 | 1 38.4 | 1 01.4 | 315 53 | 173 56 | 141 97 |
| Balance | 54,466 14 | 25,796 34 | 28,669 80 | 62.7 | 62.4 | 165 80 | 78 53 | 87 27 |
| Income unallocated | 2,736 13 | ..... | ..... | ..... | ..... | 8 33 | ..... | ..... |
| Net Result | 57,202 27 | ..... | ..... | ..... | ..... | 174 13 | ..... | ..... |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

August, 1916.

| —— | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 94,972 | 46,473 | 48,499 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 863,715 | 562,026 | 301,689 | 12.1 | 6.2 | ..... | ..... | ..... |
| " " Empty | 243,531 | 243,531 | ..... | 5.2 | ..... | ..... | ..... | ..... |
| Total Car Miles | 1,107,246 | 805,557 | 301,689 | 17.3 | 6.2 | ..... | ..... | ..... |
| REVENUE. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 165,604 43 | 94,860 30 | 70,744 13 | 2 04.1 | 1 45.9 | 504 12 | 288 77 | 215 35 |
| Incidental to transportation | 10,084 19 | 4,500 69 | 5,583 50 | 9.7 | 11.5 | 30 70 | 13 70 | 17 00 |
| Total | 175,688 62 | 99,360 99 | 76,327 63 | 2 13.8 | 1 57.4 | 534 82 | 302 47 | 232 35 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 33,964 50 | 17,899 29 | 16,065 21 | 38.5 | 33.1 | 103 39 | 54 49 | 48 90 |
| " " Equipment | 17,643 29 | 8,134 57 | 9,508 72 | 17.5 | 19.6 | 53 71 | 24 76 | 28 95 |
| Traffic Expenses | 3,758 86 | 751 76 | 3,007 10 | 1.6 | 6.2 | 11 44 | 2 29 | 9 15 |
| Transportation Expenses | 62,658 02 | 40,511 59 | 22,146 43 | 87.2 | 45.7 | 190 74 | 123 32 | 67 42 |
| Miscellaneous Operations | 3,939 13 | 1,753 44 | 2,185 69 | 3.8 | 4.5 | 11 99 | 5 34 | 6 65 |
| General Expenses | 7,478 93 | 4,233 08 | 3,245 85 | 9.1 | 6.7 | 22 77 | 12.89 | 9 88 |
| Transportation for Investment—*Cr.* | 220 58 | 220 58 | ..... | .5 | ..... | 67 | 67 | ..... |
| Total Operating Expenses | 129,222 15 | 73,063 15 | 56,159 00 | 1 57.2 | 1 15.8 | 393 37 | 222 42 | 170 95 |
| Hire of Equipment | 6,553 37 | 9,510 31 | Cr. 2,956 94 | 20.5 | Cr. 6.1 | 19 95 | 28 95 | Cr. 9 00 |
| Total Expenses | 135,775 52 | 82,573 46 | 53,202 06 | 1 77.7 | 1 09.7 | 413 32 | 251 37 | 161 95 |
| Balance | 39,913 10 | 16,787 53 | 23,125 57 | 36.1 | 47.7 | 121 50 | 51 10 | 70 40 |
| Income unallocated | 16,305 66 | ..... | ..... | ..... | ..... | 49 64 | ..... | ..... |
| Net Result | 56,218 76 | ..... | ..... | ..... | ..... | 171 14 | ..... | ..... |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

September, 1916.

| —— | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 94,202 | 48,540 | 45,662 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 880,962 | 617,541 | 263,421 | 12.7 | 5.8 | ..... | ..... | ..... |
| " " Empty | 255,317 | 255,317 | ..... | 5.3 | ..... | ..... | ..... | ..... |
| Total Car Miles | 1,136,279 | 872,858 | 263,421 | 18. | 5.8 | ..... | ..... | ..... |
| REVENUE. | | | | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 187,192 85 | 97,650 26 | 89,542 59 | 2 01.2 | 1 96.1 | 569 84 | 297 26 | 272 58 |
| Incidental to transportation | 10,899 36 | 5,080 66 | 5,818 70 | 10.4 | 12.7 | 33 18 | 15 47 | 17 71 |
| Total | 198,092 21 | 102,730 92 | 95,361 29 | 2 11.6 | 2 08.8 | 603 02 | 312 73 | 290 29 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 15,648 55 | 9,123 10 | 6,525 45 | 18.8 | 14.3 | 47 64 | 27 77 | 19 87 |
| " " Equipment | 12,378 52 | 3,096 65 | 9,281 87 | 06.4 | 20.3 | 37 68 | 9 43 | 28 25 |
| Traffic Expenses | 1,047 35 | 605 27 | 442 08 | 01.2 | 01 | 3 19 | 1 84 | 1 35 |
| Transportation Expenses | 64,994 19 | 44,404 86 | 20,589 33 | 91.5 | 45.1 | 197 85 | 135 17 | 62 68 |
| Miscellaneous Operations | 4,485 67 | 1,264 75 | 3,220 92 | 02.6 | 07 | 13 65 | 3 85 | 9 80 |
| General Expenses | 11,358 98 | 6,747 23 | 4,611 75 | 13.9 | 10.1 | 34 58 | 20 54 | 14 04 |
| Transportation for Investment—*Cr.* | 275 80 | 275 80 | ..... | .6 | ..... | 84 | 84 | ..... |
| Total Operating Expenses | 109,637 46 | 64,966 06 | 44,671 40 | 1 33.8 | 97.8 | 333 75 | 197 76 | 135 99 |
| Hire of Equipment | 6,254 11 | 5,718 48 | 535 63 | 11.8 | 01.2 | 19 04 | 17 41 | 1 63 |
| Total Expenses | 115,891 57 | 70,684 54 | 45,207 03 | 1 45.6 | 99 | 352 79 | 215 17 | 137 62 |
| Balance | 82,200 64 | 32,046 38 | 50,154 26 | 66 | 1 09.8 | 250 23 | 97 56 | 152 67 |
| Income unallocated | 2,901 48 | ..... | ..... | ..... | ..... | 8 83 | ..... | ..... |
| Net Result | 85,102 12 | ..... | ..... | ..... | ..... | 259 06 | ..... | ..... |

## Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road.

October, 1916.

| | Total. | Freight. | Passenger. | Per Train Mile. | | Per Mile of Road. | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight. | Passenger. | Total. | Freight. | Passenger. |
| Train Miles | 97,553 | 54,120 | 43,433 | | | | | |
| Car Miles—Loaded | 952,401 | 721,045 | 231,356 | 13.3 | 5.3 | | | |
| " " Empty | 213,241 | 213,241 | | 4 | | | | |
| Total Car Miles | 1,165,642 | 934,286 | 231,356 | 17.3 | 5.3 | | | |
| REVENUE. | | | | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 189,927 48 | 115,830 56 | 74,096 92 | 2 14 | 1 70.6 | 578 16 | 352 60 | 225 56 |
| Incidental to transportation | 9,072 99 | 4,983 35 | 4,089 64 | 09.2 | 09.4 | 27 62 | 15 17 | 12 45 |
| Total | 199,000 47 | 120,813 91 | 78,186 56 | 2 23.2 | 1 80 | 605 78 | 367 77 | 238 01 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 15,161 24 | 9,142 23 | 6,019 01 | 16.9 | 13.8 | 46 15 | 27 83 | 18 32 |
| " " Equipment | 13,654 15 | 4,766 76 | 8,887 39 | 08.8 | 20.5 | 41 57 | 14 51 | 27 06 |
| Traffic Expenses | 1,192 19 | 718 70 | 473 49 | 01.3 | 01.1 | 3 63 | 2 19 | 1 44 |
| Transportation Expenses | 60,639 62 | 40,410 14 | 20,229 48 | 74.7 | 46.6 | 184 59 | 123 01 | 61 58 |
| Miscellaneous Operations | 4,814 00 | 1,857 56 | 2,956 44 | 03.4 | 06.8 | 14 65 | 5 65 | 9 00 |
| General Expenses | 10,232 67 | 6,098 67 | 4,134 00 | 11.3 | 09.5 | 31 15 | 18 57 | 12 58 |
| Transportation for Investment—*Cr.* | 287 35 | 287 35 | | 00.5 | | 87 | 87 | |
| Total Operating Expenses | 105,406 52 | 62,706 71 | 42,699 81 | 1 15.9 | 98.3 | 320 87 | 190 89 | 129 98 |
| Hire of Equipment | 7,152 58 | 7,404 90 | Cr. 252 32 | 13.6 | Cr. 00.6 | 21 77 | 22 54 | Cr. 77 |
| Total Expenses | 112,559 10 | 70,111 61 | 42,447 49 | 1 29.5 | 97.7 | 342 64 | 213 43 | 129 21 |
| Balance | 86,441 37 | 50,702 30 | 35,739 07 | 93.7 | 82.3 | 263 14 | 154 34 | 108 80 |
| Income unallocated | 36,227 87 | | | | | 110 28 | | |
| Net Result | 122,669 24 | | | | | 373 42 | | |

Statement Earnings and Expenses—Freight and Passenger—per Train Mile and per Mile of Road

November 1st, 1915, to October 31st, 1916.

| | Total | Freight | Passenger | Per Train Mile | | Per Mile of Road | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Freight | Passenger | Total | Freight | Passenger |
| Train Miles | 1,145,787 | 609,524 | 536,263 | ..... | ..... | ..... | ..... | ..... |
| Car Miles—Loaded | 11,626,247 | 8,830,820 | 2,795,427 | 14.5 | 5.2 | ..... | ..... | ..... |
| " " Empty | 3,018,495 | 3,018,495 | ..... | 4.9 | ..... | ..... | ..... | ..... |
| Total Car Miles | 14,644,742 | 11,849,315 | 2,795,427 | 19.4 | 5.2 | ..... | ..... | ..... |
| REVENUE. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Transportation | 2,044,808 99 | 1,330,925 07 | 713,883 92 | 2 18.4 | 1 33.1 | 6,224 68 | 4,051 52 | 2,173 16 |
| Incidental to transportation | 93,312 96 | 52,384 51 | 40,928 45 | 08.6 | 7.6 | 284 06 | 159 47 | 124 59 |
| Total | 2,138,121 95 | 1,383,309 58 | 754,812,37 | 2 27 | 1 40.7 | 6,508 74 | 4,210 99 | 2,297 75 |
| EXPENDITURES. | | | | | | | | |
| Maintenance of Way and Structures | 349,024 48 | 205,235 20 | 143,789 28 | 33.7 | 26.8 | 1,062 48 | 624 77 | 437 71 |
| " " " Equipment | 248,702 04 | 119,080 01 | 129,622 03 | 19.5 | 24.2 | 757 08 | 362 49 | 394 59 |
| Traffic Expenses | 22,465 69 | 12,204 27 | 10,261 42 | 02. | 01.9 | 68 39 | 37 15 | 31 24 |
| Transportation Expenses | 842,058 75 | 576,871 52 | 265,187 23 | 94.6 | 49.4 | 2,563 35 | 1,756 08 | 807 27 |
| Miscellaneous Operations | 42,562 89 | 18,059 69 | 24,503 20 | 03. | 04.6 | 129 57 | 54 98 | 74 59 |
| Transportation for Investment—*Cr.* | 1,954 13 | 1,954 13 | ..... | 00.3 | ..... | 5 95 | 5 95 | ..... |
| General Expenses | 91,317 74 | 55,490 55 | 35,827 19 | 09.1 | 06.7 | 277 98 | 168 92 | 109 06 |
| Total Operating Expenses | 1,594,177 46 | 984,987 11 | 609,190 35 | 1 61.6 | 1 13.6 | 4,852 90 | 2,998 44 | 1,854 46 |
| Hire of Equipment | 105,241 09 | 92,088 69 | 13,152 40 | 15.1 | 02.4 | 320 37 | 280 33 | 40 04 |
| Total Expenses | 1,699,418 55 | 1,077,075 80 | 622,342 75 | 1 76.7 | 1 16 | 5,173 27 | 3,278 77 | 1,894 50 |
| Balance | 438,703 40 | 306,233 78 | 132,469 62 | 50.3 | 24.7 | 1,335 47 | 932 22 | 403 25 |
| Income unallocated | 90,002 06 | ..... | ..... | ..... | ..... | 273 98 | ..... | ..... |
| Net Result | 528,705 46 | ..... | ..... | ..... | ..... | 1,609 45 | ..... | ..... |

Freight Traffic Movement—Company's Material Excluded—Year Ending October 31st, 1916.

| Commodity. | Freight originating on T. & N. O. | Freight originating at other stations in Canada. | Freight originating in U.S. | Total Freight. |
|---|---|---|---|---|
| | Whole Tons. | Whole Tons. | Whole Tons. | Whole Tons. |
| Products of Agriculture— | | | | |
| Grain | 5,590 | 209,922 | ..... | 215,512 |
| Flour | 165 | 5,881 | ..... | 6,046 |
| Other Mill Products | 226 | 1,978 | ..... | 2,204 |
| Hay | 8,282 | 1,623 | ..... | 9,905 |
| Tobacco | ..... | 124 | ..... | 124 |
| Cotton | ..... | ..... | ..... | ..... |
| Fruit and Vegetables | 2,522 | 11,472 | 35 | 14,029 |
| Other Products of Agriculture | 18 | 271 | 80 | 369 |
| Total | 16,803 | 231,271 | 115 | 248,189 |
| Products of Animals— | | | | |
| Live Stock | 921 | 1,503 | ..... | 2,424 |
| Dressed Meats | ..... | 697 | ..... | 697 |
| Other Packing House Products | ..... | 441 | ..... | 441 |
| Poultry, Game and Fish | ..... | 1,626 | ..... | 1,626 |
| Wool | ..... | ..... | ..... | ..... |
| Hides and Leather | ..... | 1,105 | ..... | 1,105 |
| Other Products of Animals | 40 | 1,159 | ..... | 1,199 |
| Total | 961 | 6,531 | ..... | 7,492 |
| Products of Mines— | | | | |
| Anthracite Coal | 384 | 9,783 | 7,585 | 17,752 |
| Bituminous Coal | 1,001 | 70,047 | 20,564 | 91,612 |
| Coke | 49 | 211 | 735 | 995 |
| Ores | 27,889 | ..... | ..... | 27,889 |
| Stone, Sand and other like articles | 13,969 | 4,389 | 195 | 18,553 |
| Other Products of Mines | 389 | 886 | ..... | 1,275 |
| Total | 43,681 | 85,316 | 29,079 | 158,076 |
| Products of Forests— | | | | |
| Lumber | 115,856 | 14,061 | ..... | 129,917 |
| Other Products of Forests | 142,586 | 2,301 | ..... | 144,887 |
| Total | 258,442 | 16,362 | ..... | 274,804 |
| Manufactures— | | | | |
| Petroleum and other Oils | 94 | 6,202 | 112 | 6,408 |
| Sugar | 27 | 1,810 | ..... | 1,837 |
| Iron, Pig and Bloom | ..... | 458 | 65 | 523 |
| Iron and Steel Rails | 136 | 1,003 | 27 | 1,166 |
| Other Castings and Machinery | 1,990 | 13,131 | 523 | 15,644 |
| Bar and Sheet Metal | 250 | 3,834 | ..... | 4,084 |
| Cement, Brick and Lime | 1,521 | 14,651 | 119 | 16,291 |
| Agricultural Implements | 37 | 4,422 | ..... | 4,459 |
| Wagons, Carriages, Tools, etc | 48 | 6,080 | ..... | 6,128 |
| Wines, Liquors and Beers | 68 | 3,252 | 114 | 3,434 |
| Household Goods and Furniture | 327 | 9,585 | ..... | 9,912 |
| Other Manufactures | 60,211 | 27,542 | 1,066 | 88,819 |
| Total | 64,709 | 91,970 | 2,026 | 158,705 |
| Merchandise | 21,773 | 39,259 | 703 | 61,735 |
| Miscellaneous— | | | | |
| Other Commodities not mentioned above | 4,213 | 9,264 | 140 | 13,617 |
| Total Tonnage | 410,582 | 479,973 | 32,063 | 922,618 |

## Statistics—Temiskaming and Northern Ontario Railway.

Comparative Passenger and Freight Statement.

| —— | Passengers. | Revenue. |
|---|---|---|
| | | $ c. |
| Number of passengers carried during year 1905..... | 86,648 | 108,681 76 |
| " " " " 1906..... | 359,861 | 254,759 33 |
| " " " " 1907..... | 518,678 | 388,343 03 |
| " " " " 1908..... | 479,005 | 366,504 53 |
| " " " " 1909..... | 580,748 | 483,110 89 |
| " " " " 1910..... | 670,913 | 606,967 91 |
| " " " " 1911..... | 479,102 | 653,063 01 |
| " " " " 1912..... | 497,452 | 599,681 73 |
| " " " " 1913..... | 508,055 | 576,049 37 |
| " " " " 1914..... | 535,869 | 544,820 08 |
| " " " " 1915..... | 480,995 | 482,349 80 |
| " " " " 1916..... | 485,759 | 624,808 12 |
| Total ..... | 5,683,085 | 5,689,139 56 |

Number of passengers carried one mile, period 1905 to 1916, inclusive..... 236,452,346

| —— | Tons. | Revenue. |
|---|---|---|
| | | $ c. |
| Number of tons of freight carried during year 1905 ... | 99,192 | 121,530 46 |
| " " " " " 1906 ... | 273,749 | 230,552 63 |
| " " " " " 1907 ... | 393,589 | 390,894 29 |
| " " " " " 1908 ... | 484,444 | 471,203 41 |
| " " " " " 1909 ... | 498,645 | 756,141 66 |
| " " " " " 1910 ... | 624,820 | 852,886 46 |
| " " " " " 1911 ... | 564,120 | 974,678 33 |
| " " " " " 1912 ... | 562,734 | 929,464 66 |
| " " " " " 1913 ... | 674,942 | 906,476 16 |
| " " " " " 1914 ... | 742,366 | 952,090 35 |
| " " " " " 1915 ... | 676,938 | 924,732 59 |
| " " " " " 1916 ... | 922,618 | 1,331,614 31 |
| Total..... | 6,518,157 | 8,842,265 31 |

Number of tons of freight carried one mile, period 1905 to 1916, inclusive..... 752,164,141

## Equipment owned by Temiskaming and Northern Ontario Railway. October 31st, 1916.

| | Total Authorized Equipment. | Available for Service. | Destroyed or Transferred to other classes | Capacity. Tractive Power. | Total Valuation. |
|---|---|---|---|---|---|
| | | | | | $ c. |
| STEAM LOCOMOTIVES. | | | | | |
| Class A 3 | 4 | 4 | ..... | 112,640 | ..... |
| Class B 4 | 4 | 4 | ..... | 170,000 | ..... |
| Class C 2 | 2 | 2 | ..... | 26,488 | ..... |
| Class C 3 | 30 | 29 | 1 | 680,746 | ..... |
| Class F 3 | 4 | 4 | ..... | 121,600 | ..... |
| Total | 44 | 43 | 1 | ..... | 953,855 81 |
| PASSENGER EQUIPMENT. | | | | | |
| First Class Coaches (wooden) | 14 | 14 | ..... | ..... | ..... |
| " " " (steel) | 6 | 6 | ..... | ..... | ..... |
| Second " " (wooden) | 21 | 14 | 7 | ..... | ..... |
| " " " (steel) | 4 | 4 | ..... | ..... | ..... |
| Combination " (wooden) | 3 | 3 | ..... | ..... | ..... |
| " " (steel) | 3 | ..... | 3 | ..... | ..... |
| Parlor-Cafe | 3 | 3 | ..... | ..... | ..... |
| Baggage and Express (wooden) | 7 | 5 | 2 | ..... | ..... |
| " " (steel) | 4 | 4 | ..... | ..... | ..... |
| Mail and Express (wooden) | 6 | 5 | 1 | ..... | ..... |
| " " (steel) | 3 | 3 | ..... | ..... | ..... |
| Private | 2 | 2 | ..... | ..... | ..... |
| Business | 2 | 2 | ..... | ..... | ..... |
| Total | 78 | 65 | 13 | ..... | 810,887 41 |
| FREIGHT EQUIPMENT. | | | | | |
| Box | 150 | 145 | 5 | ..... | ..... |
| Stock | 10 | 9 | 1 | ..... | ..... |
| Vans | 24 | 20 | 4 | ..... | ..... |
| Flats | 502 | 446 | 56 | ..... | ..... |
| Total | 686 | 620 | 66 | ..... | 621,843 84 |
| MAINTENANCE OF WAY AND STRUCTURES EQUIPMENT. | | | | | |
| Pile Driver | 1 | 1 | ..... | ..... | ..... |
| Snow Plows | 4 | 3 | 1 | ..... | ..... |
| Flangers | 3 | 3 | ..... | ..... | ..... |
| Steam Shovels | 3 | 3 | ..... | ..... | ..... |
| Wrecking Cranes | 2 | 2 | ..... | ..... | ..... |
| Auxiliaries (Complete) | 2 | 2 | ..... | ..... | ..... |
| Road Cabin Cars | 2 | 2 | ..... | ..... | ..... |
| Ledgerwood Unloaders | 3 | 2 | 1 | ..... | ..... |
| Side Ballast Plows | 6 | 6 | ..... | ..... | ..... |
| Centre Ballast Plows | 3 | 3 | ..... | ..... | ..... |
| Jordan Spreaders | 2 | 2 | ..... | ..... | ..... |
| Pile Driver Tank | 1 | 1 | ..... | ..... | ..... |
| Mahoney Ditching Machine | 1 | 1 | ..... | ..... | ..... |
| Centre Ballast Spreader | 1 | 1 | ..... | ..... | ..... |
| American Railroad Ditcher | 1 | 1 | ..... | ..... | ..... |
| Cinder Cars, Steel | 12 | 12 | ..... | ..... | ..... |
| Hart Convertibles | 35 | 35 | ..... | ..... | ..... |
| Exhibition Cars | 1 | 1 | ..... | ..... | ..... |
| Fish Cars (owned by Dept. of Public Works) | 1 | 1 | ..... | ..... | ..... |
| Tank Cars | 6 | 6 | ..... | ..... | ..... |
| Boarding Cars | 8 | 8 | ..... | ..... | ..... |
| Hand Cars | 120 | 108 | 12 | ..... | ..... |
| Push Cars | 86 | 78 | 8 | ..... | ..... |
| Motor Cars | 3 | 3 | ..... | ..... | ..... |
| Velocipedes | 20 | 5 | 15 | ..... | ..... |
| Total | 327 | 290 | 37 | ..... | 184,204 65 |
| Grand Total | ..... | ..... | ..... | ..... | 2,570,791 71 |

## TONNAGE.

Statement of Tons One Mile—Year Ending October 31st, 1916.

| Month. | South Bound (Pounds). | North Bound (Pounds). | Total (Pounds). | Whole Tons. | Tons (One Mile). |
|---|---|---|---|---|---|
| November 1915.... | 55,285,326 | 53,993,987 | 109,279,313 | 54,640 | 9,437,571 |
| December " .... | 62,600,499 | 61,513,885 | 124,114,384 | 62,057 | 10,830,405 |
| January 1916.... | 71,440,446 | 54,134,777 | 125,575,223 | 62,787 | 10,926,224 |
| February " .... | 90,807,369 | 64,946,021 | 155,753,390 | 77,877 | 14,564,430 |
| March " .... | 164,779,898 | 70,849,972 | 235,629,870 | 117,815 | 23,550,979 |
| April " .... | 249,784,002 | 65,017,258 | 314,801,260 | 157,400 | 34,061,092 |
| May " .... | 167,018,965 | 46,464,665 | 213,483,630 | 106,742 | 22,948,016 |
| June " .... | 59,156,324 | 43,250,135 | 102,406,459 | 51,203 | 9,227,699 |
| July " .... | 68,952,776 | 50,209,144 | 119,161,920 | 59,581 | 10,347,823 |
| August " .... | 52,108,646 | 55,593,133 | 107,701,779 | 53,851 | 8,379,686 |
| September " .... | 38,293,367 | 66,725,723 | 105,019,090 | 52,510 | 8,456,032 |
| October " .... | 54,871,511 | 77,437,823 | 132,309,334 | 66,155 | 11,112,562 |
| Total..... | 1,135,099,129 | 710,136,523 | 1,845,235,652 | 922,618 | 173,842,519 |

## FOREST PRODUCTS.

Statement of Tonnage, Tons one mile. Total Revenue, and Revenue per ton per mile, for 12 months November 1st, 1915, to October 31st, 1916, under various headings.

| Commodity. | Gross Tonnage. (Pounds). | Whole Tons. | Tons One Mile. | Revenue. | Revenue per ton per mile. |
|---|---|---|---|---|---|
| | | | | $ c. | c. |
| Lumber ..... | 184,511,584 | 92,456 | 10,067,522 | 101,967 23 | 1.0283 |
| Pulpwood..... | 222,294,893 | 111,147 | 18,102,884 | 92,917 32 | .5133 |
| Pulp ..... | 49,602,176 | 24,801 | 5,719,085 | 24,887 68 | .4352 |
| Slabwood..... | 21,168,976 | 10,584 | 446,690 | 6,507 65 | 1.4569 |
| Poles ..... | 6,268,205 | 3,134 | 320,772 | 3,281 62 | 1.0227 |
| Posts..... | 3,017,460 | 1,509 | 165,166 | 1,382 07 | .8367 |
| Piling ..... | 4,447,500 | 2,224 | 87,934 | 1,604 48 | 1.8246 |
| Timber ..... | 5,425,909 | 2,713 | 127,233 | 2,446 35 | 1.9227 |
| Logs ..... | 33,993,640 | 16,997 | 716,102 | 7,600 44 | 1.0611 |
| Ties..... | 17,705,295 | 8,853 | 1,023,424 | 9,674 59 | .9453 |
| Shingles ..... | 533,500 | 267 | 23,517 | 334 47 | 1.4222 |
| Laths ..... | 438,300 | 219 | 32,484 | 350 71 | 1.0796 |
| Sawdust ..... | 199,700 | 100 | 2,124 | 65 58 | 3.0876 |
| Total..... | 549,607,138 | 274,804 | 26,834,937 | 253,020 19 | .9429 |

## PASSENGER TRAFFIC.

Statement of Passengers, Revenue. Passengers one Mile and Passenger Revenue per mile, from November 1st, 1915, to October 31st, 1916.

| Form of Ticket. | Passengers. | Revenue. | Passengers One Mile. | Passengers, Revenue One Mile. |
|---|---|---|---|---|
| | | $ c. | | c. |
| Commercial ..... | 22,524 | 44,897 10 | 1,988,145 | 2.26 |
| Week Ends ..... | 16,480 | 9,309 78 | 625,759 | 1.46 |
| Excursion ..... | 28,911 | 54,036 38 | 3,873,843 | 1.40 |
| Market ..... | 4,991 | 1,252 20 | 77,984 | 1.61 |
| Militia ..... | 18,111 | 43,808 24 | 3,159,301 | 1.39 |
| Scholars..... | 2,441 | 227 10 | 44,166 | .51 |
| Ordinary ..... | 392,301 | 471,277 32 | 17,202,893 | 2.74 |
| Total ..... | 485,759 | 624,808 12 | 26,972,091 | 2.32 |

Cutting Oats on Farm of Mr. Joe Brown. South half Lot 2, Con. 2, Chamberlain Township.

Statement of Materials and Supplies on hand October 31st, 1916.

*Shop Stock—North Bay.*

| Class. | Material. | Amount. |
|---|---|---|
| 1 | Air brake material | $1,371 55 |
| 2 | Wheels, tires and axles | 23,698 84 |
| 3 | Bolts, nuts, etc. | 7,106 03 |
| 4 | Building material | 1,617 44 |
| 5 | Coach fittings | 7,961 50 |
| 6 | Iron castings | 7,703 99 |
| 7 | Couplers and parts | 2,021 78 |
| 8 | Forgings | 1,158 89 |
| 9 | Telegraph and telephone material | 1,752 01 |
| 10 | Electrical material | 6,071 81 |
| 11 | Glass | 1,625 00 |
| 12 | Hardware | 1,761 99 |
| 13 | Brass castings | 9,888 25 |
| 14 | Lamps and parts | 967 02 |
| 15 | Locomotive parts finished | 5,819 08 |
| 16 | Lumber (carpenter shop) | 6,208 56 |
| 17 | " (bridge and building department) | 7,434 74 |
| 18 | Metals | 518 09 |
| 19 | Miscellaneous | 3,618 76 |
| 21 | Water supply service parts | 218 64 |
| 22 | Paints and brushes | 2,925 63 |
| 23 | Pipes, fittings, valves, etc. | 5,824 57 |
| 26 | Hose and rubber | 1,567 13 |
| 28 | Commissary | 765 11 |
| 29 | Springs | 2,546 06 |
| 30 | Iron and steel (bar) | 5,773 73 |
| 31 | Steam shovel, ditcher and ledgerwood parts | 504 41 |
| 32 | Tools, etc. | 3,556 18 |
| 33 | Track material, North Bay | 21,190 55 |
| | " " on line | 4,909 78 |
| | | $148,087 12 |
| | Less amount of angle bars and fish plates sold, for which shop stock had received no debit | 187 29 |
| | | $147,899 83 |

*Shop Stock—Englehart.*

| Class. | Material. | Amount. |
|---|---|---|
| 1 | Air brake material | $40 19 |
| 2 | Wheels, tires and axles | 11,838 88 |
| 3 | Bolts, nuts, etc. | 567 71 |
| 4 | Building material | ..... |
| 5 | Coach fittings | 33 15 |
| 6 | Castings | 515 62 |
| 7 | Couplers and parts | 333 71 |
| 8 | Forgings | 61 56 |
| 9 | Telegraph and telephone material | ..... |
| 10 | Electrical material | 64 84 |
| 11 | Glass | 70 07 |
| 12 | Hardware | 31 49 |
| 13 | Brass castings | 595 62 |
| 14 | Lamps and parts | 56 23 |
| 15 | Locomotive parts finished | 45 31 |
| 16 | Lumber (carpenter shop) | ..... |
| 17 | " (bridge and building department) | ..... |
| 18 | Metals | 9 11 |
| 19 | Miscellaneous | 222 60 |
| 21 | Water supply service parts | ..... |
| 22 | Paints and brushes | 8 54 |
| 23 | Pipes, fittings, valves, etc. | 394 27 |
| 26 | Hose and rubber | 192 43 |
| 28 | Commissary | ..... |
| 29 | Springs | 226 47 |
| 30 | Iron and steel (bar) | 42 88 |
| 31 | Steam shovel, ditcher and ledgerwood parts | ..... |

*Shop Stock—Englehart.—Continued.*

| Class. | Material. | Amount. |
|---|---|---|
| 32 | Tools, etc. | $99 19 |
| 33 | Track material | ..... |
| | | $15,449 87 |

*Shop Stock—Timmins.*

| | | |
|---|---|---|
| 1 | Air brake material | $4 41 |
| 2 | Wheels, tires and axles | 86 56 |
| 3 | Bolts, nuts, etc. | 100 85 |
| 4 | Building material | ..... |
| 5 | Coach fittings | 3 30 |
| 6 | Castings | 119 16 |
| 7 | Couplers and parts | 87 85 |
| 8 | Forgings | 44 86 |
| 9 | Telegraph and telephone material | ..... |
| 10 | Electrical material | 10 13 |
| 11 | Glass | 5 42 |
| 12 | Hardware | 2 04 |
| 13 | Brass castings | ..... |
| 14 | Lamps and parts | 11 02 |
| 15 | Locomotive parts finished | 83 |
| 16 | Lumber (carpenter shop) | ..... |
| 17 | " (bridge and building department) | ..... |
| 19 | Miscellaneous | 38 19 |
| 21 | Water service supply parts | ..... |
| 22 | Paints and brushes | 3 86 |
| 23 | Pipes, fittings and valves | 20 84 |
| 26 | Hose and rubber | 58 38 |
| 28 | Commissary | ..... |
| 29 | Springs | 4 34 |
| 30 | Iron and steel (bar) | ..... |
| 31 | Steam shovel, ditcher and ledgerwood parts | ..... |
| 32 | Tools | 10 29 |
| 33 | Track material | ..... |
| | | $612 33 |

*Shop Stock—Cochrane.*

| | | |
|---|---|---|
| 1 | Air brake material | $12 62 |
| 2 | Wheels, tires and axles | 171 52 |
| 3 | Bolts, nuts, etc. | 467 40 |
| 4 | Building material | 08 |
| 5 | Coach fittings | 11 63 |
| 6 | Castings | 144 39 |
| 7 | Couplers and parts | 199 90 |
| 8 | Forgings | 60 48 |
| 9 | Telegraph and telephone material | ..... |
| 10 | Electrical material | ..... |
| 11 | Glass | 1 62 |
| 12 | Hardware | 9 84 |
| 13 | Brass castings | 106 16 |
| 14 | Lamps and parts | 4 74 |
| 15 | Locomotive parts finished | 12 46 |
| 16 | Lumber (carpenter shop) | ..... |
| 17 | " (bridge and building department) | ..... |
| 18 | Metals | ..... |
| 19 | Miscellaneous | 33 23 |
| 21 | Water supply service parts | 7 50 |
| 22 | Paints and brushes | 6 20 |
| 23 | Pipes, fittings, valves, etc. | 52 72 |
| 26 | Hose and rubber | 48 82 |
| 28 | Commissary | ..... |
| 29 | Springs | 47 34 |
| 30 | Iron and steel (bar) | 62 |
| 31 | Steam shovel, ditcher and ledgerwood parts | ..... |
| 32 | Tools, etc. | 27 02 |
| 33 | Track material | ..... |
| | | $1,426 29 |

RECAPITULATION OF SHOP STOCK.

| | | Amount. |
|---|---|---|
| North Bay | | $147,899 83 |
| Englehart | | 15,449 87 |
| Timmins | | 612 33 |
| Cochrane | | 1,426 29 |
| | | $165,388 32 |
| Less unvouchered material:— | | |
| Aikenhead Hardware Co., butts, etc. | $144 00 | |
| Westinghouse Co., air brake material | 13 30 | |
| Steel Company of Canada, nuts | 11 60 | |
| John Bourke, plaster and lime | 9 85 | |
| Lindsay & McCluskey, lime | 16 80 | |
| Richardson, J. W., tar paper | 48 32 | |
| Begg Bros., cheese cloth and cotton | 13 25 | |
| Wagar Furniture Co., mattresses | 5 00 | |
| Imperial Oil Company, oil | 31 73 | |
| P. McCool, piles | 140 00 | |
| | | 433 85 |
| | | $164,954 47 |
| Plus freight and duty paid in October but material not vouchered until November, 1916: | | |
| Northern Electric order No. 2676 | $ 65 | |
| Stone & Co., No. 2556 | 87 | |
| F. Young, Chicago | 7 88 | |
| O. F. Jordan | 1 97 | |
| R. Ryerson | 2 38 | |
| | | 13 75 |
| | | $164,968 22 |

*Stationery Stock.*

| | | |
|---|---|---|
| North Bay | | $5,564 45 |
| Less unvouchered material:— | | |
| Form No. 1708 | $4 38 | |
| " 1533 | 1 01 | |
| " 2028 | 25 30 | |
| " 2029 | 25 50 | |
| | | 56 19 |
| | | $5,508 26 |

*Oil and Waste Stock.*

| | |
|---|---|
| North Bay | $4,497 00 |
| Elk Lake | 25 98 |
| Englehart | 546 06 |
| Timmins | 123 06 |
| Cochrane | 411 50 |
| | $5,603 60 |

*Tie Stock.*

| | |
|---|---|
| North Bay and on line | $6,475 45 |

*Ice Stock.*

| | |
|---|---|
| North Bay | $419 84 |
| Englehart | 22 40 |
| Cochrane | 32 00 |
| | $474 24 |

*Anthracite Coal.*

| | Weight. | |
|---|---|---|
| North Bay freight office | 16,250 | |
| " " ice house | 5,500 | |
| " " stores shed | 99,000 | |
| Widdifield | 28,500 | |
| Tomiko | 26,000 | |
| Redwater | 21,500 | |
| Temagami | 33,940 | |
| Latchford | 52,000 | |
| Cobalt | 94,500 | |
| North Cobalt | 35,660 | |
| Haileybury | 102,400 | |
| New Liskeard | 80,032 | |
| Uno Park | 6,000 | |
| Thornloe | 41,000 | |
| Earlton | 51,360 | |
| Elk Lake | 30,000 | |
| Heaslip | 31,000 | |
| Englehart | 190,760 | |
| Charlton | 49,000 | |
| Dane | 36,750 | |
| Swastika | 35,000 | |
| Matheson | 2,700 | |
| Porquis Jct. | 104,260 | |
| Iroquois Falls | 6,400 | |
| Porcupine | 32,000 | |
| South Porcupine | 103,080 | |
| Schumacher | 69,208 | |
| Timmins | 11,000 | |
| Cochrane | 35,632 | |
| | 1,430,432 | or 715⅕ tons |
| 715⅕ tons at $6.70 per ton | | $4,791 84 |

*Bituminous Coal.*

| | Weight. | |
|---|---|---|
| North Bay | 41,500,000 | |
| Widdifield | 79,000 | |
| Tomiko | 34,000 | |
| Redwater | 109,000 | |
| Temagami | 33,760 | |
| Latchford | 23,000 | |
| New Liskeard | 47,820 | |
| Elk Lake | 40,000 | |
| Englehart | 773,277 | |
| Matheson | 17,000 | |
| Porquis Junction | 682,900 | |
| Timmins | 56,350 | |
| Cochrane | 744,000 | |
| | 44,140,107 | or 22,070 N.T. |
| 8,471 tons at $4.70 per ton | | $39,813 70 |
| 13,599 " " 4.60 " " | | 62,555 40 |
| 22,070 | | $102,369 10 |
| Less value of confiscated coal less freight and duty. | | |
| Car 209996 } 76658 } | $261 74 | |
| To advance charges not paid on car 12120 | 57 75 | |
| | | 319 49 |
| | | $102,049 61 |

*Rail Stock.*

| | |
|---|---|
| North Bay and on line | $30,592 89 |

*Summary.*

| | |
|---|---|
| Shop stock | $164,968 22 |
| Stationery | 5,508 26 |
| Oil and waste | 5,603 60 |
| Ties | 6,475 45 |
| Ice | 474 24 |
| Anthracite coal | 4,791 84 |
| Bituminous coal | 102,049 61 |
| Rails | 30,592 89 |
| Total | $320,464 11 |

## TRAFFIC AND MILEAGE STATISTICS.

*Passenger Traffic.*

| | |
|---|---|
| 1. Total passengers carried earning revenue | 485,759 |
| 2. Number of passengers carried one mile | 26,972,091 |
| 3. Number of passengers carried one mile per mile of road | 82,107 |
| 4. Average distance carried—miles | 55.53 |
| 5. Total passenger revenue | $624,808 12 |
| 6. Average amount received from each passenger | 1 29 |
| 7. Average receipts per passenger per mile (cents) | .02.32 |
| 8. Total passenger train service revenue | 713,883 92 |
| 9. Passenger service train revenue per mile of road | 2,173 16 |
| 10. Passenger service train revenue per train mile | 1 33 |

*Freight Traffic.*

| | |
|---|---|
| 11. Number of tons carried earning revenue | 922,618 |
| 12. Number of tons carried earning revenue one mile | 173,842,519 |
| 13. Number of tons carried earning revenue one mile per mile of road | 529,201 |
| 14. Average distance haul of one ton—miles | 188.42 |
| 15. Total freight revenue | $1,331,614 31 |
| 16. Average amount received for each ton | 1 44 |
| 17. Average amount received per ton per mile (cents) | .00.77 |
| 18. Freight revenue per mile of road | 4,053 62 |
| 19. Freight revenue per train mile | 2 18 |

*Total Traffic.*

| | |
|---|---|
| 20. Operating revenue | $2,138,121 95 |
| 21. Operating revenue per mile of road | 6,508 74 |
| 22. Operating revenue per train mile | 1 97 |
| 23. Operating expenses | 1,594,177 46 |
| 24. Operating expenses per mile of road | 4,852 90 |
| 25. Operating expenses per train mile | 1 47 |
| 26. Net operating revenue | 543,944 49 |
| 27. Net operating revenue per mile of road | 1,655 84 |

*Car Mileage.*

| | |
|---|---|
| 28. Average number of passengers carried one mile per car mile | 9.7 |
| 29. Average number of passengers carried one mile per train mile | 50 |
| 30. Average number of passenger cars per train mile | 5.2 |
| 31. Mileage of passenger cars | 2,795,427 |
| 32. Mileage of loaded freight cars—north and east | 4,541,996 |
| 33. Mileage of loaded freight cars—south and west | 4,288,824 |
| 34. Mileage of empty freight cars—north and east | 1,210,883 |
| 35. Mileage of empty freight cars—south and west | 1,807,612 |
| 36. Average number of freight cars per train mile | 19.4 |
| 37. Average number of loaded freight cars per train mile | 14.5 |
| 38. Average number of empty freight cars per train mile | 4.9 |
| 39. Average number of tons freight per train mile | 285 |
| 40. Average number of tons freight per loaded car mile | 19.7 |
| 41. Average mileage operated during year | 328.5 |

*Train Mileage.*

| | |
|---|---|
| 42. Mileage of revenue passenger trains | 475,833 |
| 43. Mileage of revenue mixed trains | 60,430 |
| 44. Mileage of revenue freight trains | 549,094 |
| 45. Total revenue train mileage | 1,085,357 |

## STATEMENT OF LAND PURCHASED.

*November 1st, 1915, to October 31st, 1916.*

| | | |
|---|---|---|
| Simon Henerofsky—north half Lot 1, Con. 5 Chamberlain—1.5 acres | | $75 00 |
| J. Hampden Field—Lot 1, Con. 3 Chamberlain—1 acre | | 50 00 |
| John Stockdale—Lot 73, North Bay Jct. | | 1,500 00 |
| Province of Ontario—South Half Lot 2, Con. 2 Newmarket—1.24 acres | 1 20 | |
| North Half Lot 2, Con. 2 Newmarket—.83 acres | 80 | 2 00 |
| J. J. Belland—North Half Lot 2, Con. 2 Newmarket—.83 acres | | 40 00 |
| Chas. P. Scott—South Half Lot 2, Con. 2 Newmarket—1.24 acres | | 60 00 |
| H. T. Routley—Lots 220 and 221, parcel No. 4675, registered plan M.73 Haileybury | | 1,750 00 |
| Imperial Oil Co., Ltd.—Block "F" east side of Gore Street, North Bay | | 2,000 00 |
| Total | | $5,477 00 |

## TOWNSITES REPORT.

### Statement Receipts and Expenditure—Nov. 1, 1915, to Oct. 31, 1916.

| EXPENDITURES. | | |
|---|---|---|
| *Latchford.* | | |
| Donation to Town | | 200 00 |
| *Englehart.* | | |
| Donation to Town towards installation of Sewerage and Waterworks System | | 1,318 54 |
| *Matheson.* | | |
| Donation to Town | | 250 00 |
| *Cochrane.* | | |
| Taxes | $151 51 | |
| Clearing | 100 00 | |
| | | 251 51 |
| General and miscellaneous expenses | | 3,247 69 |
| Credit to profit and loss | | 2,982 87 |
| | | $8,250 61 |

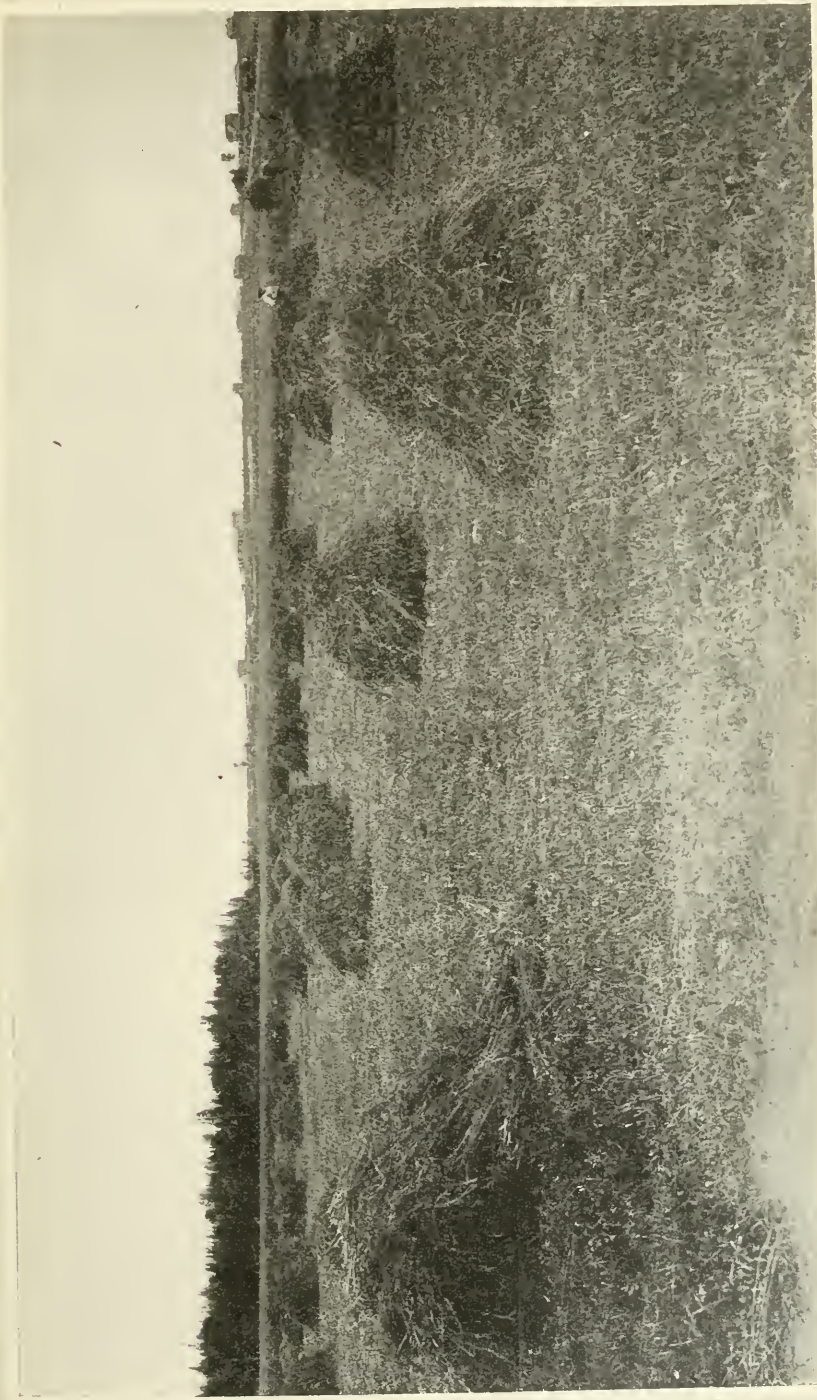
| RECEIPTS. | | |
|---|---|---|
| *Received on lots sold during year.* | | |
| Englehart | $253 20 | |
| Matheson | 559 20 | |
| Matheson Sub-division | 18 75 | |
| Monteith | 26 25 | |
| Porquis Junction | 37 50 | |
| Cochrane | 64 00 | |
| Cochrane Annex | 1,286 50 | |
| | | $2,245 40 |
| *Received on deferred payments.* | | |
| Temagami | $25 00 | |
| Cobalt | 499 00 | |
| Englehart | 1,531 18 | |
| Dane | 37 50 | |
| Matheson | 338 46 | |
| Matheson Sub-division | 170 00 | |
| Monteith | 179 30 | |
| Porquis Junction | 511 80 | |
| Cochrane | 658 33 | |
| Cochrane Annex | 385 00 | |
| | | 4,335 57 |
| *Interest received on deferred payments.* | | |
| Cobalt | $48 93 | |
| Englehart | 436 35 | |
| Dane | 16 79 | |
| Matheson | 73 54 | |
| Matheson Sub-division | 39 49 | |
| Monteith | 18 10 | |
| Porquis Junction | 132 41 | |
| Cochrane | 233 85 | |
| Cochrane Sub-division | 109 51 | |
| Cochrane Annex | 23 57 | |
| | | 1,132 54 |
| Interest received on bank deposit | | 283 10 |
| Hay sold from Englehart Townsite | | 50 00 |
| Rent lots, Cobalt | | 179 00 |
| Rent lots, Matheson | | 25 00 |
| | | $8,250 61 |

## TOWNSITES ACCOUNTS.

### Statement of Lots Sold—Townsites—Nov. 1, 1915, to Oct. 31, 1916.

| —— | Lots Sold. | Sale Price. | | Amount Paid. | Balance due. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| Englehart..... | 1 | 1 00* | | | |
| | 1 Parcel (40 Acres) | 612 00 | | | |
| | 2 " (37 " ) | 1,110 00 | | | |
| | 1 " (17 " ) | 800 00 | | | |
| | 1 " (40 " ) | 204 00 | | | |
| | | | 2,727 00 | 253 20 | 2,473 80 |
| Matheson ..... | 16 | 975 00 | | | |
| | 1 Parcel (22 Acres) | 936 00 | | | |
| | 1 " (121 " ) | 2,420 00 | | | |
| | | | 4,331 00 | 559 20 | 3,771 80 |
| Matheson—Subdivision ..... | 1 | ..... | 75 00 | 18 75 | 56 25 |
| Monteith ..... | 2 | ..... | 105 00 | 26 25 | 78 75 |
| Porquis Junction.. | 1 | ..... | 150 00 | 37 50 | 112 50 |
| Cochrane ..... | 4 | ..... | 320 00 | 64 00 | 256 00 |
| Cochrane Annex... | 507 | 5,785 00 | | | |
| | Block " B " | 500 00 | | | |
| | | | 6,285 00 | 1,286 50 | 4,998 50 |
| | | | 13,993 00 | 2,245 40 | 11,747 60 |

*Corporation of the Town of Englehart.



Field of Hay, Farm of Mr. A. Slade, New Liskeard, Ont.

## Statement Showing Employees, Total Days Worked, Average Daily Compensation, Etc.

November 1st, 1915, to October 31st, 1916.

| Class. | Number. | Total days worked. | Total compensation. | Average daily compensation. |
|---|---|---|---|---|
| | | | $ c. | $ c. |
| I. *General Offices*: | | | | |
| 1. General officers | 7 | 2,562 | 16,759 92 | 6 54 |
| 2. Chief Clerks | 5 | 1,830 | 7,340 00 | 4 01 |
| 3. Other Clerks | 56 | 14,518 | 30,069 27 | 2 07 |
| 4. Stenographers and Typists. | 16 | 4,305 | 7,814 25 | 1 81 |
| 5. Telegraph and Telephone Operators | ..... | ..... | ..... | ..... |
| 6. Messengers and Attendants | ..... | ..... | ..... | ..... |
| 7. Other General Office Employees | 11 | 3,749 | 9,744 89 | 2 60 |
| Total | 95 | 26,964 | 71,728 33 | 1 94 |
| II. *Road*: | | | | |
| 11. Officers | 6 | 2,225 | 13,108 54 | 5 89 |
| 12. Clerks | 11 | 3,628 | 8,985 06 | 2 48 |
| 13. Shop foremen | 1 | 227 | 807 04 | 3 56 |
| 14. Structural iron workers | ..... | ..... | ..... | ..... |
| 15. Machinists | ..... | ..... | ..... | ..... |
| 16. Masons and bricklayers | ..... | ..... | ..... | ..... |
| 17. Carpenters | 5 | 5,112 | 14,536 62 | 2 84 |
| 18. Painters | 3 | 724 | 1,992 16 | 2 75 |
| 19. Other M. W. S. shopmen | ..... | ..... | ..... | ..... |
| 20. Other skilled laborers | 1 | 272 | 746 46 | 2 74 |
| 21. Section foremen | 50 | 16,251 | 45,098 46 | 2 78 |
| 22. Watchmen and trackwalkers | ..... | 186 | 465 00 | 2 50 |
| 23. Other sectionmen | 162 | 59,689 | 117,498 81 | 1 97 |
| 24. Unskilled laborers | 2 | 362 | 871 68 | 2 41 |
| 25. All other M. W. S. employees | 14 | 6,739 | 15,767 36 | 2 34 |
| 26. Foremen of construction gangs | 10 | 2,759 | 9,291 71 | 3 37 |
| 27. Other men in construction gangs | 78 | 23,018 | 46,021 77 | 2 00 |
| Total | 343 | 121,192 | 275,190 67 | 2 27 |
| III. *Equipment*: | | | | |
| 31. Officers | 3 | 1,081 | 5,278 75 | 4 88 |
| 32. Clerks and attendants | 7 | 1,700 | 3,205 88 | 1 89 |
| 33. Shop foremen | 6 | 2,206 | 8,379 00 | 3 80 |
| 34. Machinists | 19 | 6,088 | 23,390 62 | 3 84 |
| 35. Carpenters | 21 | 5,900 | 18,778 36 | 3 18 |
| 36. Painters and upholsterers. | 11 | 3,870 | 10,960 39 | 2 83 |
| 37. Other shopmen | 109 | 29,227 | 68,891 83 | 2 36 |
| 38. Car inspectors | 9 | 3,827 | 10,329 72 | 2 70 |
| 39. Watchmen | ..... | ..... | ..... | ..... |
| 40. All other M. E. employees. | 24 | 7,477 | 18,293 96 | 2 45 |
| Total | 209 | 61,376 | 167,508 51 | 2 73 |
| IV. *Traffic*: | | | | |
| 51. Officers | 1 | 366 | 2,400 00 | 6 56 |
| 52. Clerks and attendants | 7 | 3,454 | 6,118 32 | 1 77 |
| 53. Travelling solicitors | ..... | ..... | ..... | ..... |
| 54. Employees in outside agencies | ..... | ..... | ..... | ..... |
| 55. All other traffic employees. | ..... | ..... | ..... | ..... |
| Total | 8 | 3,820 | 8,518 32 | 2 23 |

## Statement Showing Employees, Total Days Worked, Average Daily Compensation, Etc.—Continued.

November 1st, 1915, to October 31st, 1916.

| Class. | Number. | Total. days worked. | Total compensation. | Average daily compensation. |
|---|---|---|---|---|
| V. *Transportation*: | | | $ c. | $ c. |
| 71. Officers | 3 | 1,098 | 7,105 00 | 6 47 |
| 72. Clerks and attendants | 10 | 3,201 | 6,078 61 | 1 90 |
| 73. Despatchers | 4 | 1,624 | 8,769 58 | 5 40 |
| 74. Station agents | 27 | 10,506 | 34,829 20 | 3 32 |
| 75. Operators not agents | 24 | 9,269 | 26,046 50 | 2 81 |
| 76. Other station employees | 170 | 47,073 | 83,478 70 | 1 77 |
| 77. Yardmasters & yard clerks | 15 | 6,057 | 11,701 98 | 1 93 |
| 78. Yard enginemen | 8 | 4,396 | 15,353 36 | 3 49 |
| 79. Yard conductors and brakemen | 12 | 6,556 | 24,252 54 | 3 70 |
| 80. Yard switchmen | ..... | ..... | ..... | ..... |
| 81. Other yard employees | ..... | ..... | ..... | ..... |
| 82. Enginehouse employees | 30 | 12,431 | 28,041 00 | 2 26 |
| 83. Road enginemen and motormen | 50 | 30,287 | 114,296 03 | 3 71 |
| 84. Passenger conductors | 5 | 4,600 | 15,046 75 | 3 27 |
| 85. Freight conductors | 17 | 8,840 | 37,285 26 | 4 22 |
| 86. Other road trainmen | 48 | 30,177 | 75,039 03 | 2 49 |
| 87. Operators, interlockers and signals | ..... | ..... | ..... | ..... |
| 88. Crossing flagmen and gatemen | ..... | ..... | ..... | ..... |
| 89. Drawbridge operators | ..... | ..... | ..... | ..... |
| 90. Employees on floating equipment | ..... | ..... | ..... | ..... |
| 91. Employees in express service | ..... | ..... | ..... | ..... |
| 92. Employees in claim dept. | ..... | ..... | ..... | ..... |
| 93. All other trans. employees | 31 | 11,564 | 22,561 37 | 1 95 |
| **Total** | 454 | 187,679 | 509,884 91 | 2 71 |
| Grand Total | 1,109 | 401,031 | 1,032,830 74 | 2 57 |
| Construction | 130 | 34,496 | 85,707 99 | 2 48 |
| Total payroll | 1,239 | 435,527 | 1,118,538 73 | 2 56 |
| Donations to Employees Enlisted for Overseas Service | ..... | ..... | 9,347 01 | ..... |
| Total | ..... | ..... | 1,127,885 74 | ..... |

STATEMENT OF WAGES PAID EMPLOYEES—YEAR ENDED OCTOBER 31ST, 1916.

*Office of Secretary-Treasurer.*

| | | | |
|---|---|---|---|
| Maund, W. H. | Secretary-Treasurer | $2,499 96 | |
| Odlum, A. B. | Chief Clerk | 1,020 00 | |
| Pratt, A. B. | Clerk | 1,800 00 | |
| Downing, Miss A. | Stenographer | 900 00 | |
| McNeice, Miss H. | " | 750 00 | |
| Southby, Miss G. | " | 630 00 | |
| Odlum, Miss R. | " | 660 00 | |
| Brocklehurst, Miss H. | Clerk | 344 52 | |
| Way, Miss K. | Filing Clerk | 369 35 | |
| Whiteside, W. | Mail Clerk | 30 00 | |
| Corbett, G. | " | 50 00 | |
| | | | $9,053 83 |

*Office of Auditor of Disbursements and Accountant.*

| | | | |
|---|---|---|---|
| Gracey, T. J. | Auditor of Disbursements and Accountant | $1,920 00 | |
| Hamilton, D. | Assistant Accountant | 1,500 00 | |
| May, E. N. | Clerk | 1,140 00 | |
| Saunderson, G. S. | " | 870 00 | |
| Mack, R. F. | " | 435 00 | |
| Jones, R. V. | " | 240 00 | |
| Robinson, Miss S. | " | 720 00 | |
| Johnson, Miss G. | Stenographer | 250 00 | |
| Henaghan, Miss A. | " | 397 58 | |
| McPhee, Miss K. | Clerk | 367 74 | |
| Harris, Miss I. M. | " | 323 33 | |
| Lennox, Miss V. | Jr. " | 150 00 | |
| Martin, R. | Jr. " | 28 06 | |
| | | | $8,341 71 |

*Office of Mining Engineer.*

| | | | |
|---|---|---|---|
| Cole, A. A. | Mining Engineer | $3,420 00 | |
| Tittensor, Miss E. | Stenographer | 733 87 | |
| Molyneaux, Miss M. | " | 46 13 | |
| | | | $4,200 00 |

*Office of Superintendent of Traffic.*

| | | | |
|---|---|---|---|
| Griffin, W. A. | Supt. Traffic | $3,240 00 | |
| Ryan, S. H. | Trainmaster | 2,040 00 | |
| Faught, S. J. | Chief Clerk | 1,300 00 | |
| Brown, C. F. | Stenographer and Clerk | 598 00 | |
| Bain, J. | Clerk | 800 00 | |
| Cormack, J. | " | 289 66 | |
| Faught, W. F. | " | 25 50 | |
| Brockway, W. L. | " | 648 83 | |
| Foley, P. S. | " | 340 00 | |
| Beaton, W. S. | " | 334 84 | |
| Calder, A. | " | 10 64 | |
| Newell, M. | Stenographer | 613 47 | |
| Gregory, K. E. | " | 645 00 | |
| Munns, V. | " | 9 00 | |
| Reynolds, E. | " | 22 14 | |
| Nugent, P. | " | 218 06 | |
| Morgan, P. | " | 72 70 | |
| Fitzgerald, H. | " | 25 04 | |
| Brewster, L. | Porter | 780 00 | |
| Monette, A. P. | " | 780 00 | |
| Perry, J. | " | 9 00 | |
| Swain, W. | " | 87 99 | |
| Swan, R. | Constable | 985 00 | |

*Office of Superintendent of Traffic.—Continued.*

| | | | |
|---|---|---|---|
| Hudson, J. | Special Officer | $5 03 | |
| Laupret, L. | " | 12 34 | |
| O'Hare, P. | " | 12 34 | |
| O'Hare, J. | " | 12 34 | |
| Daly, J. | " | 12 34 | |
| Riddler, C. | " | 10 88 | |
| Hudson, J. | " | 12 34 | |
| Hume, J. | Janitor | 840 00 | |
| Hume, Mrs. J. | Janitress | 7 74 | |
| Tompkin, J. | Office Boy | 117 16 | |
| Martin, R. | " | 83 | |
| Rayner, E. | Stenographer | 7 74 | |
| | | | $14,925 95 |

*Office of Paymaster.*

| | | | |
|---|---|---|---|
| Ferguson, C. L. | Paymaster | $2,220 00 | |
| Cousineau, L. J. | Chief Clerk | 890 00 | |
| Amos, H. C. | Clerk | 80 00 | |
| | | | $3,190 00 |

*Office of Auditor and Car Accountant, Auditor Receipts and Car Accountant, Freight Claims Agent.*

| | | |
|---|---|---|
| Mitchell, R. H. | A. & C. A. | $1,520 00 |
| Harper, W. J. | A. R. & C. A. | 600 00 |
| Teskey, H. W. | C. C. & F. C. A. | 1,290 00 |
| McGee, H. H. | Travelling Auditor | 1,560 00 |
| Willis, J. B. | " " | 1,370 00 |
| Brockway, H. | Clerk | 890 00 |
| Brennan, J. B. | " | 827 50 |
| Lavery, T. H. | " | 820 00 |
| Cartmill, G. H. | " | 760 00 |
| Keeler, S. T. | " | 307 50 |
| Peel, R. | " | 585 73 |
| McCausland, J. | " | 455 00 |
| Doidge, M. | " | 625 00 |
| Campbell, Mrs. M. | " | 505 00 |
| Amos, D. | " | 480 00 |
| Smith, G. | " | 510 00 |
| Sheppard, Mrs. B. | " | 319 52 |
| McKeown, J. | " | 190 00 |
| Duncan, H. | " | 166 13 |
| Conroy, P. A. | " | 51 30 |
| McEdwards, W. | " | 625 00 |
| Martin, H. | " | 259 10 |
| Miller, F. | " | 133 06 |
| Cocksedge, G. | " | 349 35 |
| Brockway, L. | " | 194 19 |
| Trotter, A. T. | " | 272 00 |
| Gallagher, J. A. | " | 292 74 |
| Jones, W. | " | 257 50 |
| Rigby, H. | " | 191 94 |
| Freeman, B. | " | 129 84 |
| Harrison, C. | " | 114 03 |
| Knapp, E. A. | " | 157 26 |
| Douglass, M. B. | " | 156 77 |
| Kelly, T. J. | " | 101 83 |
| Osborne, A. | " | 23 71 |
| Hamilton, Mrs. C. | " | 10 16 |
| Palmer, G. E. | Claim Inspector | 300 00 |
| Fitzgerald, H. | Stenographer | 282 50 |
| Ansell, H. V. | " | 454 27 |
| Rayner, J. E. | " | 249 33 |
| Casey, M. | " | 208 79 |
| Winters, G. | " | 160 00 |
| Wilson, N. R. | " | 180 00 |
| Munns, I. | " | 16 77 |

*Office of Auditor and Car Accountant, etc.—Continued.*

| | | | |
|---|---|---|---|
| Lefebvre, A. | Stenographer | $127 74 | |
| Sherman, M. | " | 40 00 | |
| Brockie, P. | Laborer | 1 00 | |
| Fitzsimmons, T. | " | 1 83 | |
| | | | $19,123 39 |

*Land Department.*

| | | | |
|---|---|---|---|
| Lee, G. W. | Commissioner and Land Agent | $2,499 96 | |
| Bauldry, W. J. | Townsite Inspector | 1,300 00 | |
| Palmer, G. E. | Col. Inspector | 900 00 | |
| Gregory, Miss T. | Stenographer | 780 00 | |
| | | | $5,479 96 |

*Office of General Freight and Passenger Agent.*

| | | | |
|---|---|---|---|
| Parr, A. J. | G. F. & P. A. | $2,400 00 | |
| Harper, W. J. | Chief Clerk | 1,070 00 | |
| Banks, E. C. | " | 1,070 00 | |
| Jones, W. | Clerk | 495 00 | |
| Kelly, T. J. | " | 311 70 | |
| McLeod, R. C. | " | 505 00 | |
| Gauthier, J. A. | " | 222 50 | |
| Martin, R. M. | Office Boy and Clerk | 122 52 | |
| Aubrey, A. | " " | 26 67 | |
| Burritt, W. | " " | 330 00 | |
| Silverthorne, W. G. | " " | 31 45 | |
| Milligan, M. | Stenographer | 306 50 | |
| Crummie, M. A. | " | 200 30 | |
| Casey, M. | " | 243 63 | |
| Anderson, F. R. | " | 570 00 | |
| Jessup, A. L. | " | 366 13 | |
| Wilson, N. R. | " | 85 64 | |
| Winters, G. | " | 60 64 | |
| Munns, I. | " | 7 74 | |
| Taylor, E. L. | " | 92 90 | |
| | | | $8,518 32 |

*Train Despatchers.*

| | | | |
|---|---|---|---|
| Lamb, R. L. | Chief Despatcher | $2,220 00 | |
| Chatterton, C. D. | Despatcher | 2,162 47 | |
| Workman, R. | " | 2,161 75 | |
| Trowhill, R. | " | 1,869 12 | |
| Dwyer, J. H. | Operator and Despatcher | 1,140 03 | |
| Clark, M. G. | Operator | 15 83 | |
| Prentice, R. | " | 122 07 | |
| Cattley, B. | " | 292 27 | |
| | | | $9,983 54 |

*Purchasing and Stores Department.*

| | | |
|---|---|---|
| Graham, W. A. | P. A. & S. K. | $2,400 00 |
| Alford, G. B. | Chief Clerk | 1,310 00 |
| Freeman, A. | Clerk | 1,125 00 |
| Tarsey, S. G. | " | 860 00 |
| Valliant, E. R. | " | 528 48 |
| Newman, A. C. | " | 193 06 |
| Elston, E. | " | 211 77 |
| Fletcher, D. R. | " | 330 00 |
| Donegan, E. J. | Stenographer | 498 00 |
| Polk, V. K. | " | 18 33 |
| Darling, E. J. | " | 598 40 |
| McGonegal, G. | " | 146 32 |
| Munns, I. | " | 33 55 |
| Sale, T. M. | Foreman | 1,310 00 |
| Dignan, J. C. | Storeman | 786 00 |
| Depledge, F. | " | 786 00 |
| Daly, G. L. | " | 534 71 |

*Purchasing and Stores Department.—Continued.*

| | | | |
|---|---|---|---|
| Bigg, J. E. | Storeman | $600 00 | |
| Jones, R. J. | " | 19 64 | |
| Prue, A. | " | 45 29 | |
| Cavanagh, A. W. | Inspector | 845 16 | |
| English, W. | " | 1,085 75 | |
| McManus, J. | Yard Foreman | 903 90 | |
| Couch, A. | Laborer | 575 70 | |
| Labrecque, J. | " | 573 65 | |
| Watkin, W. | Storekeeper, Englehart | 1,056 00 | |
| | | | $17,374 71 |

*Freight Office, North Bay.*

| | | | |
|---|---|---|---|
| Baker, C. O. | Agent | $1,800 00 | |
| King, A. T. | Chief Clerk | 1,014 35 | |
| Sullivan, M. J. | Cashier | 790 00 | |
| Knapp, E. A. | Clerk | 436 13 | |
| Forrest, W., Sr. | " | 805 00 | |
| Gibson, R. | " | 756 45 | |
| Gallagher, J. A. | " | 357 12 | |
| Thompson, J. C. | " | 232 42 | |
| Prentice, M. | " | 262 58 | |
| Forrest, W., Jr. | " | 560 00 | |
| Lapointe, H. | " | 530 80 | |
| Fetterly, U. A. | " | 76 77 | |
| Martin, C. | " | 91 45 | |
| Tompkins, J. | " | 18 55 | |
| Winters, O. | " | 54 14 | |
| Falby, F. | " | 105 89 | |
| Beatty, I. | " | 40 00 | |
| Biggs, P. | " | 2 58 | |
| McNutt, H. M. | " | 400 64 | |
| Newman, A. C. | " | 30 35 | |
| Samler, W. | " | 44 26 | |
| Trotter, A. T. | " | 140 00 | |
| Redden, J. B. | " | 47 89 | |
| Duncan, A. R. | " | 186 29 | |
| Lansloot, R. | " | 125 84 | |
| Fitzsimmons, G. | " | 99 68 | |
| Axler, T. | " | 186 61 | |
| Nugent, P. | Stenographer | 408 83 | |
| Carr, B. | " | 150 97 | |
| Devine, M. | " | 145 16 | |
| Brown, E. | " | 44 84 | |
| McGillis, A. | Messenger | 99 56 | |
| Willis, F. | " | 322 14 | |
| Lariviere, A. | " | 41 66 | |
| Aubrey, J. N. | " | 18 67 | |
| **Wilson, C. J.** | " | 23 59 | |
| | | | $10,451.21 |

*Freight Shed, North Bay.*

| | | |
|---|---|---|
| Sharvell, F. W. | Foreman | $1,070 00 |
| Ashford, S. | Timekeeper | 761 00 |
| Dugard, W. | Checker | 756 00 |
| Rogers, A. E. | " | 310 00 |
| Pratt, C. | " | 756 00 |
| Smith, A. | " | 232 00 |
| White, R. | " | 377 16 |
| Webber, S. | " | 751 95 |
| Reddeway, W. H. | " | 808 00 |
| Bird, W. A. | " | 808 00 |
| Sperritt, W. | " | 704 00 |
| McNutt, H. | " | 244 35 |
| Yorkston, A. | " | 580 00 |
| Pike, F. | " | 727 88 |
| Brigginshaw, W. | " | 527 72 |

*Freight Shed, North Bay.—Continued.*

| | | | |
|---|---|---|---|
| Cox, J. | Checker | $706 33 | |
| Pugh, A. | " | 681 58 | |
| Relph, R. | " | 246 77 | |
| Fitzsimmons, T. | " | 616 67 | |
| Barber, W. | " | 540 62 | |
| English, J. | " | 338 72 | |
| Gall, A. | " | 649 19 | |
| Cockerline, J. | " | 113 06 | |
| Childerhose, R. | " | 370 00 | |
| Thompson, J. C. | " | 247 21 | |
| Brousseau, L. | " | 314 68 | |
| Connolly, W. | " | 45 00 | |
| James, V. | " | 22 37 | |
| Truckers and Laborers | | 8,559 20 | |
| | | | $22,865 46 |

*Yard Office, North Bay Junction.*

| | | | |
|---|---|---|---|
| McKerrow, J. O. | Yardmaster | $844 05 | |
| Ness, C. | " | 1,652 91 | |
| Richmond, J. N. | " | 768 57 | |
| Bradford, J. N. | " | 213 75 | |
| Treacy, W. L. | " | 9 03 | |
| Roberts, C. A. | Operator | 1,296 25 | |
| Cattley, B. | " | 274 88 | |
| Dwyer, J. H. | " | 248 19 | |
| Clark, M. G. | " | 992 08 | |
| Dudley, H. A. | " | 160 69 | |
| Oulette, A. | " | 226 69 | |
| Borthwick, T. D. | " | 98 23 | |
| Brasher, S. M. | " | 134 12 | |
| Knowles, R. T. | " | 261 97 | |
| Thompson, W. A. S. | Chief Clerk | 950 00 | |
| Wissler, J. S. | Clerk | 815 00 | |
| Wright, W. T. | " | 661 93 | |
| Elston, F. | " | 700 00 | |
| Chamberlain, S. | " | 357 98 | |
| Thom, W. | " | 229 60 | |
| Daly, R. | " | 109 68 | |
| Samler, W. | " | 618 40 | |
| Donegan, J. C. | " | 610 00 | |
| Archambault, O. | " | 260 64 | |
| Archambault, J. O. | " | 466 25 | |
| Lapointe, E. | " | 358 63 | |
| Thompson, J. C. | " | 49 84 | |
| Herbert, E. R. | " | 35 48 | |
| Prentice, R. | Checker | 42 57 | |
| Martin, C. | " | 10 16 | |
| Biggs, P. | " | 8 71 | |
| Connelly, W. | " | 81 29 | |
| Edey, J. | Messenger | 410 92 | |
| Brown, D. | " | 456 87 | |
| Barnhardt, W. D. | " | 80 | |
| McGillis, A. | " | 217 33 | |
| Harvey, C. | " | 81 | |
| Edey, C. | " | 20 18 | |
| Mallory, B. | " | 80 | |
| Gauthier, J. | " | 40 | |
| Doyle, R. | " | 1 64 | |
| Edwards, E. | " | 40 | |
| Patterson, B. | " | 2 16 | |
| Lensby, J. | " | 158 53 | |
| Soule, A. | " | 220 96 | |
| Gubb, G. | " | 31 45 | |
| Hawkins, J. | " | 7 26 | |
| Lansloot, R. | " | 22 22 | |
| Barnhardt, W. | " | 63 40 | |
| Aubry, J. | " | 2 82 | |

*Yard Office, North Bay Junction.—Continued.*

| | | | |
|---|---|---|---|
| Dubois, H. | Messenger | $48 33 | |
| Peak, W. | " | 83 | |
| Soule, F. | " | 24 64 | |
| Chase, H. F. | Signalman | 1 77 | |
| Prou, A. | " | 257 25 | |
| Cramp, A. | " | 253 71 | |
| Caley, C. | " | 5 32 | |
| Fetterley, W. | Call Boy | 352 06 | |
| Colbon, W. | Janitor | 100 00 | |
| Brousseau, L. T. | Sanitary Work | 1 50 | |
| O'Hara, H. | " | 1 50 | |
| | | | $16,213 43 |

*Widdifield Station.*

| | | | |
|---|---|---|---|
| Deagle, L. A. | Agent | $982 26 | $982 26 |

*Tomiko Station.*

| | | | |
|---|---|---|---|
| Smith, A. J. | Agent | $1,154 05 | |
| Vanmeer, A. W. | Operator | 77 66 | |
| Durand, J. B. | " | 2 19 | |
| Dudley, H. A. | " | 742 23 | |
| Marshall, R. S. | " | 35 54 | |
| Noble, S. G. | " | 33 90 | |
| Fisher, C. E. | " | 23 51 | |
| Oulette, A. | " | 23 00 | |
| | | | $2,092 08 |

*Diver Station.*

| | | | |
|---|---|---|---|
| Baker, T. J. | Agent | $79 88 | $79 88 |

*Redwater Station.*

| | | | |
|---|---|---|---|
| Baker, T. J. | Agent | $1,142 51 | |
| Valliere, J. L. | Relieving Agent | 44 60 | |
| | | | $1,187 11 |

*Temagami Station.*

| | | | |
|---|---|---|---|
| Picard, J. W. | Agent | $979 86 | |
| Clark, M. G. | " | 239 72 | |
| Marshall, R. S. | Relieving Agent | 27 50 | |
| Beaton, W. S. | Baggageman | 8 87 | |
| Calder, A. | " | 62 10 | |
| Purcell, A. D. | " | 67 74 | |
| Bouley, E. | Cleaning | 5 00 | |
| Derosier, T. | " | 5 00 | |
| | | | $1,395 79 |

*Latchford Station.*

| | | | |
|---|---|---|---|
| Richardson, R. | Agent | $1,390 18 | |
| Marshall, R. S. | Relieving Agent | 60 75 | |
| Brown, H. G. | Operator | 361 30 | |
| Dudley, H. A. | " | 14 87 | |
| Beemer, F. B. | " | 38 16 | |
| Oulette, A. | " | 50 85 | |
| Durand, J. B. | " | 364 73 | |
| Switzer, H. R. | " | 115 10 | |
| Sullivan, T. W. | Sanitary Work | 5 00 | |
| | | | $2,400 94 |

*Cobalt Station.*

| | | | |
|---|---|---|---|
| Way, D. H. | Agent | $1,785 00 | |
| Marshall, R. S. | Operator | 86 85 | |
| Earle, W. R. | " | 1,290 17 | |

*Cobalt Station.—Continued.*

| | | | |
|---|---|---|---|
| Nixon, E. | Chief Clerk | $940 00 | |
| Carter, W. | Clerk | 706 00 | |
| Way, V. L. | " | 111 77 | |
| Stuckey, H. | " | 130 00 | |
| Borland, A. | " | 344 00 | |
| Skillicorn, H. | " | 633 87 | |
| Downard, F. | " | 229 35 | |
| Bywaters, H. | Checker | 773 23 | |
| Bell, R. | " | 350 00 | |
| Monkhouse, T. | " | 437 00 | |
| Whitehead, H. | Baggageman | 840 00 | |
| Drew, S. | Clerk | 300 65 | |
| Borland, W. | " | 225 00 | |
| McLaughlin, J. | " | 159 82 | |
| Hyde, S. | " | 85 50 | |
| Brewer, W. B. | " | 258 63 | |
| Copps, G. | " | 14 76 | |
| Brewer, M. | " | 53 71 | |
| Clark, R. | " | 138 13 | |
| Fitzgerald, Mrs. J. | " | 117 74 | |
| Fetterly, U. | " | 21 76 | |
| Way, W. K. | " | 73 50 | |
| Asseltine, G. | " | 45 82 | |
| Renaud, A. | " | 6 00 | |
| Sweeney, H. J. | " | 100 00 | |
| Gregor, M. | " | 27 26 | |
| O'Kelly, A. | Stenographer | 402 58 | |
| Lawrence, R. | " | 429 83 | |
| Maxwell, V. | " | 23 42 | |
| Crummie, M. | " | 100 39 | |
| Stewart, M. | " | 46 13 | |
| Mayer, M. | " | 143 23 | |
| Lafonde, G. | " | 4 84 | |
| Bowman, J. H. | Constable | 865 00 | |
| Lejambe, W. | Checker | 230 32 | |
| Bortimore, E. | " | 79 84 | |
| Lavergne, N. | " | 10 64 | |
| Forget, E. | Trucker | 14 19 | |
| Champagne, A. | " | 15 97 | |
| Darbyson, H. | " | 14 19 | |
| Perrault, O. | " | 56 00 | |
| Perrault, G. | " | 56 00 | |
| Lafontesie, A. | " | 10 08 | |
| Williams, H. | " | 262 87 | |
| Fisher, W. | Janitor | 15 00 | |
| St. Pierre, A. | " | 10 00 | |
| Bartlett, Mrs. M. | " | 460 00 | |
| | | | $13,536 04 |

*North Cobalt Station.*

| | | | |
|---|---|---|---|
| Gibbon, G. | Agent | $1,000 25 | |
| O'Brien, H. | Sanitary Work | 6 00 | |
| | | | $1,006 25 |

*Haileybury Station.*

| | | | |
|---|---|---|---|
| Shibley, J. H. | Agent | $1,567 63 | |
| Trousdale, F. A. | Operator | 1,071 13 | |
| Marshall, R. S. | " | 51 08 | |
| White, G. J. | Clerk | 111 29 | |
| Copner, J. M. | " | 842 73 | |
| Harris, J. B. | " | 606 41 | |
| Shibley, E. M. | " | 195 97 | |
| Wonch, E. E. | " | 251 94 | |
| Wattam, M. J. | " | 317 58 | |
| Hunter, H. | " | 41 51 | |
| Roach, I. M. | Stenographer | 332 42 | |

*Haileybury Station.—Continued.*

| | | | |
|---|---|---|---|
| Duffett, I. S. | Baggageman | $885 16 | |
| Allingham, J. | Shed Foreman | 11 67 | |
| Edwards, T. | " | 62 42 | |
| Dickson, A. | " | 157 42 | |
| Pinkney, A. | Trucker | 22 58 | |
| Hoolyhan, C. | " | 261 29 | |
| Spence, Mrs. M. E. | Cleaning | 16 00 | |
| | | | $6,806 23 |

*New Liskeard Station.*

| | | | |
|---|---|---|---|
| Goodman, E. M. | Agent | $1,426 50 | |
| Milne, W. B. | C. Clerk and R. Agent | 963 33 | |
| Durand, J. B. | Operator | 111 76 | |
| Holt, F. G. | " | 1,049 92 | |
| Murphy, E. M. | " | 771 97 | |
| Dudley, H. A. | " | 49 46 | |
| Valliere, J. L. | " | 51 11 | |
| Hainer, J. R. | " | 15 68 | |
| Wolfe, P. | Baggageman | 220 00 | |
| Herron, F. | Clerk | 420 00 | |
| Ramsay, W. | " | 730 00 | |
| Cragg, F. | " | 176 64 | |
| Brown, R. W. | " | 392 02 | |
| Haggart, W. | " | 24 50 | |
| Brown, W. | " | 46 03 | |
| Wilson, S. | Checker | 315 81 | |
| McRoberts, F. | Messenger | 56 87 | |
| Maloney, M. | " | 41 93 | |
| Davis, E. | " | 40 75 | |
| Brown, K. | " | 21 19 | |
| Stafford, E. I. | Janitor | 245 81 | |
| Hogg, A. | " | 160 00 | |
| McMillan, P. | " | 35 00 | |
| | | | $7,366 28 |

*Uno Park Station.*

| | | | |
|---|---|---|---|
| Doherty, M. R. | Agent | $967 83 | |
| Marshall, R. S. | Relieving Agent | 46 53 | |
| O'Brien, H. | Sanitary Work | 6 00 | |
| | | | $1,020 36 |

*Thornloe Station.*

| | | | |
|---|---|---|---|
| Caldwell, W. H. | Agent | $939 94 | |
| Murphy, E. M. | Relieving Agent | 43 77 | |
| | | | $983 71 |

*Earlton Station.*

| | | | |
|---|---|---|---|
| Buchanan, L. | Agent | $1,132 86 | |
| Brasher, S. M. | Relieving Agent | 128 70 | |
| McMinn, R. | Clerk | 70 97 | |
| McConomy, J. K. | " | 372 13 | |
| Hall, G. W. | " | 9 68 | |
| Brown, R. M. | " | 6 90 | |
| Blanchett, N. J. | " | 135 48 | |
| O'Brien, H. | Sanitary Work | 12 00 | |
| | | | $1,868 72 |

*Elk Lake Station.*

| | | | |
|---|---|---|---|
| Belanger, O. | Agent | $1,380 08 | |
| Murphy, E. M. | Relieving Agent | 50 03 | |
| Aubert, B. | Clerk | 66 13 | |
| Champagne, L. | Messenger | 2 50 | |
| Staniski, Mrs. T. | Janitress | 60 00 | |
| Staniski, T. | Janitor | 16 00 | |
| | | | $1,574 74 |

*Heaslip Station.*

| | | | |
|---|---|---|---|
| Chouinard, J. | Agent | $983 02 | |
| Beemer, J. H. | Relieving Agent | 24 19 | |
| Murphy, E. M. | " | 25 03 | |
| | | | $1,032 24 |

*Englehart Station.*

| | | | |
|---|---|---|---|
| Murray, F. J. | Agent | $1,316 45 | |
| Brown, A. W. | Relieving Agent | 66 79 | |
| Beemer, J. H. | Operator | 29 16 | |
| Borthwick, T. D. | " | 166 56 | |
| Bruce, G. | " | 1,368 56 | |
| Pelkie, J. A. | " | 1,250 51 | |
| Prentice, R. | " | 23 87 | |
| Oulette, A. | " | 52 58 | |
| Errett, F. A. | Clerk | 780 00 | |
| Nudds, T. | " | 549 13 | |
| Gray, E. | " | 61 29 | |
| Plumb, S. | " | 3 06 | |
| Soper, W. | " | 351 28 | |
| Gray, S. C. | Shed Foreman | 468 58 | |
| Monkhouse, T. | " | 331 01 | |
| Fox, G. | Trucker | 282 01 | |
| Murray, C. | " | 205 32 | |
| Haskins, A. | " | 2 01 | |
| Phillips, W. H. | " | 73 03 | |
| Pullen, C. | " | 1 53 | |
| Vreeland, C. | " | 12 82 | |
| Graham, J. | " | 6 33 | |
| Jarvie, R. | " | 78 51 | |
| Graham, J. | " | 39 84 | |
| Merritt, L. | " | 35 60 | |
| Vreeland, E. | " | 240 68 | |
| Mantha, O. | " | 6 93 | |
| Healy, M. | " | 6 76 | |
| Rowe, J. G. | " | 58 13 | |
| Free, W. | " | 80 38 | |
| Simpkins, A. | " | 6 71 | |
| Stevens, D. R. | " | 45 29 | |
| Peden, A. | Checker | 27 10 | |
| Wright, V. | " | 48 85 | |
| Perrault, G. | " | 30 99 | |
| McDonald, A. | " | 145 90 | |
| Lennox, S. | " | 21 82 | |
| Price, A. | " | 320 79 | |
| Hough, C. | " | 303 35 | |
| Atkinson, H. C. | Baggageman | 130 00 | |
| Fennell, J. C. | " | 275 80 | |
| Bentley, R. | Call Boy | 119 40 | |
| McLean, J. W. | " | 2 42 | |
| Preston, G. | " | 19 41 | |
| Ranstead, T. | " | 159 46 | |
| Herron, W. | " | 25 81 | |
| Antram, W. | " | 90 33 | |
| Price, T. | Janitor | 586 98 | |
| Garovitch, M. | Sanitary Work | 12 00 | |
| | | | $10,321 12 |

*Charlton Station.*

| | | | |
|---|---|---|---|
| Price, J. T. | Agent | $432 39 | |
| Brocklebank, C. H. | " | 560 51 | |
| Prentice, R. | Relieving Agent | 65 59 | |
| Marshall, R. S. | " | 40 19 | |
| Kennedy, E. | Clerk | 102 42 | |
| Rogers, G. | " | 197 58 | |
| Moronesky, N. | Sanitary Work | 2 00 | |
| | | | $1,400 68 |

*Dane Station.*

| | | | |
|---|---|---|---|
| Marshall, C. | Agent | $1,094 48 | |
| Valliere, J. L. | Operator | 16 20 | |
| Westerbrook, G. | " | 23 57 | |
| | | | $1,134 25 |

*Swastika Station.*

| | | | |
|---|---|---|---|
| Brennan, W. W. | Agent | $1,020 97 | |
| Bates, G. H. | Operator | 53 31 | |
| Wright, S. | Clerk | 208 06 | |
| Webber, W. S. | " | 212 68 | |
| Moore, T. | Checker | 3 87 | |
| Furlong, A. | Telephone Operator | 425 69 | |
| Wright, G. | " | 45 77 | |
| Boisvert, G. | " | 21 99 | |
| Boivin, E. | " | 94 84 | |
| Gomerick, J. | Sanitary Work | 5 00 | |
| | | | $2,092 18 |

*Bourkes Station.*

| | | | |
|---|---|---|---|
| Valliere, J. L. | Operator | $281 15 | |
| Hainer, J. R. | " | 852 26 | |
| Oulette, A. | " | 17 35 | |
| | | | $1,150 76 |

*Matheson Station.*

| | | | |
|---|---|---|---|
| Ackerman, T. R. | Agent | $1,381 22 | |
| Beemer, J. H. | Operator | 67 90 | |
| Westbrook, J. | " | 26 63 | |
| Westbrook, G. | " | 22 89 | |
| Prentice, R. | " | 17 14 | |
| Valliere, J. L. | " | 7 33 | |
| Bates, G. H. | " | 263 86 | |
| Swayne, R. | " | 22 84 | |
| Johnston, L. | Clerk | 166 45 | |
| Ginn, J. A. | " | 553 55 | |
| Whitehead, P. G. | " | 241 56 | |
| Wilson, E. | " | 436 51 | |
| Leitch, J. M. | " | 105 00 | |
| Cameron, R. | Checker | 68 00 | |
| Munns, I. | Stenographer | 63 35 | |
| Roach, H. | " | 21 29 | |
| Cousineau, F. | " | 30 16 | |
| Brown, A. | Cleaning | 10 00 | |
| Smith, Mrs. K. | " | 20 00 | |
| Minter, Mrs. J. | " | 5 00 | |
| Kingston, Mrs. J. | " | 4 50 | |
| Coyne, J. | " | 15 00 | |
| Brown, W. | Messenger | 53 55 | |
| | | | $3,603 73 |

*Porquis Jct. Station.*

| | | | |
|---|---|---|---|
| Beemer, F. B. | Agent | $1,048 86 | |
| Vanmeer, E. W. | Operator | 1,059 10 | |
| Pelkie, J. A. | " | 114 33 | |
| Oulette, A. | " | 50 35 | |
| Bates, G. H. | " | 411 44 | |
| Ludford, L. | Telephone Operator | 420 00 | |
| Beemer, J. H. | Operator | 263 08 | |
| McConomy, J. K. | Clerk | 232 42 | |
| Boicey, W. H. | " | 154 35 | |
| Leitch, J. M. | " | 538 87 | |
| McDonald, G. | " | 23 42 | |
| Rowlandson, J. | " | 23 83 | |

*Porquis Junction Station.—Continued.*

| | | | |
|---|---|---|---|
| Hess, D. | Clerk | $46 13 | |
| Hooey, L. | " | 17 74 | |
| Knapp, F. | Baggageman | 284 17 | |
| Switzer, H. | Checker | 28 98 | |
| Hopkins, W. | " | 4 84 | |
| Clark, H. W. | " | 73 73 | |
| Beatty, H. | " | 363 50 | |
| Jensen, A. | " | 236 16 | |
| Osborne, A. | Cleaning | 37 50 | |
| Nolting, Mrs. C. | Janitress | 70 00 | |
| | | | $5,502 80 |

*Iroquois Falls Station.*

| | | | |
|---|---|---|---|
| Sherlock, G. L. | Agent | $1,229 62 | |
| Marshall, R. S. | Operator | 17 61 | |
| Jardine, A. | " | 159 73 | |
| Brasher, S. M. | " | 198 95 | |
| Fisher, E. C. | " | 20 29 | |
| Black, W. R. | " | 2 90 | |
| Emond, E. | Clerk | 2 66 | |
| Hunter, L. | " | 869 76 | |
| Gregor, M. | " | 641 33 | |
| Gregor, L. | " | 548 71 | |
| Shipley, C. M. | " | 18 33 | |
| Johnston, C. | " | 6 66 | |
| Critchley, P. | " | 175 12 | |
| Beatty, H. | " | 73 57 | |
| Carmichael, H. A. | " | 72 21 | |
| Lyons, F. | " | 150 21 | |
| Hall, G. | " | 138 88 | |
| Stewart, J. T. | " | 134 75 | |
| Roberts. C. M. | " | 33 71 | |
| Libby, H. | " | 52 90 | |
| Calder, A. | " | 157 90 | |
| Barr, W. B. | " | 92 00 | |
| Dufresne, M. | " | 20 58 | |
| Curtis, J. W. | " | 65 81 | |
| Rose, K. F. | Baggageman | 90 75 | |
| Anyan, H. | Cleaning | 5 00 | |
| Johnston, Mrs. J. | " | 2 00 | |
| | | | $4,981 94 |

*Porcupine Station.*

| | | | |
|---|---|---|---|
| Picard, J. W. | Agent | $239 53 | |
| Price, J. T. | " | 659 03 | |
| Bates, G. H. | Relv. Agent | 42 23 | |
| Beemer, J. H. | " " | 219 19 | |
| Murphy, E. M. | " " | 44 19 | |
| Hull, J. C. | Sanitary Wk. | 2 00 | |
| | | | $1,206 17 |

*South Porcupine Station.*

| | | | |
|---|---|---|---|
| Varrett, E. J. | Agent | $1,384 71 | |
| Cattley, B. | Operator | 490 84 | |
| Marshall, R. S. | " | 101 24 | |
| Brown, H. G. | " | 717 06 | |
| Humphrey, C. R. | Clerk | 650 00 | |
| Moore, G. | " | 60 32 | |
| McLeod, R. | " | 660 00 | |
| Wright, W. | " | 147 26 | |
| Audet, E. J. | " | 399 20 | |
| Hyde, S. | " | 26 61 | |
| Hughes, R. | Shedman | 19 35 | |
| Longworth, B. | " | 29 03 | |
| Palmer, M. | " | 23 06 | |
| | | | $4,708 68 |

*Schumacher Station.*

| | | | |
|---|---|---|---|
| Hawkins, J. A. | Agent | $1,334 96 | |
| Shankman, S. | Relv. Agent | 7 92 | |
| Hawkins, R. | Clerk | 29 03 | |
| McMinn, R. | " | 232 26 | |
| Assad, K. | " | 340 16 | |
| Garovitch, M. | Sanitary Wk. | 10 00 | |
| | | | $1,954 33 |

*Timmins Station.*

| | | | |
|---|---|---|---|
| Allan, J. D. | Agent | $1,266 21 | |
| Brown, A. W. | Relv. Agent | 124 70 | |
| Schmallback, J. H. | Operator | 977 29 | |
| Shankman, S. | " | 900 69 | |
| Dudley, H. A. | " | 35 17 | |
| Beatty, E. | Stenographer | 47 68 | |
| Bridger, C. H. | Clerk | 418 70 | |
| Fulton, G. V. | " | 758 17 | |
| Germyn, C. | " | 280 97 | |
| Speirs, J. C. | " | 238 97 | |
| Bardwell, R. | " | 258 19 | |
| McGirr, W. | " | 39 00 | |
| Lett, R. | " | 143 95 | |
| Doher, M. | " | 6 03 | |
| Boicey, W. H. | " | 90 61 | |
| Bernier, J. A. | " | 219 94 | |
| Lacasse, F. B. | " | 224 79 | |
| Lessard, R. | " | 21 29 | |
| Swayne, R. | " | 319 03 | |
| Leitch, J. M. | " | 84 68 | |
| Bergeron, J. S. | " | 100 00 | |
| Hunter, L. | " | 16 94 | |
| Angell, F. | " | 20 32 | |
| Taras, N. | Checker | 5 32 | |
| Nixon, A. | " | 150 97 | |
| McDonald, G. | " | 104 00 | |
| Larocque, A. | Messenger | 206 03 | |
| Vafrquette, P. | " | 1 00 | |
| | | | $7,060 64 |

*Cochrane Station.*

| | | | |
|---|---|---|---|
| Brown, A. W. | Agent | $1,198 82 | |
| Daly, R. W. | " | 712 00 | |
| Brasher, S. M. | Operator | 467 24 | |
| Valliere, J. L. | " | 52 50 | |
| Robinson, E. | " | 1,191 76 | |
| Oulette, A. | " | 356 20 | |
| Prentice, R. | " | 24 89 | |
| Westbrook, J. H. | " | 31 31 | |
| Knowles, R. | " | 179 72 | |
| Marshall, R. S. | " | 26 58 | |
| Murphy, E. M. | " | 40 24 | |
| Cattley, B. | " | 33 41 | |
| Fisher, E. C. | " | 131 41 | |
| Jessup, A. L. | Stenographer | 233 87 | |
| Fitzgerald, H. | " | 260 00 | |
| Lockhart, G. | " | 133 55 | |
| Bernier, J. A. | Clerk | 353 81 | |
| Mortson, R. C. | " | 646 94 | |
| Drinkwater, L. | " | 828 38 | |
| Milligan, B. | " | 308 23 | |
| Murdock, H. | " | 187 72 | |
| Thompson, J. C. | " | 101 69 | |
| Gagnon, A. L. | " | 234 19 | |
| Noble, S. G. | " | 5 32 | |
| Grasser, H. | " | 55 00 | |
| Williams, R. | Baggageman | 508 00 | |

*Cochrane Station.—Continued.*

| | | | | |
|---|---|---|---|---|
| Sproule, R. | Shed Foreman | | $235 34 | |
| Drinkwater, B. | Trucker | | 725 69 | |
| Belleveau, J. | " | | 594 34 | |
| Dunn, C. | " | | 73 98 | |
| Moore, R. | " | | 105 97 | |
| Waldron, G. W. | " | | 85 50 | |
| Cavanagh, J. M. | " | | 13 06 | |
| Millman, H. | Checker | | 352 86 | |
| Hewson, W. | " | | 405 90 | |
| Johnson, F. | " | | 710 32 | |
| Scanlan, W. G. | Heaterman | | 46 99 | |
| Sterritt, S. | " | | 234 24 | |
| Kert, H. | Messenger | | 195 67 | |
| Williams, J. | " | | 96 00 | |
| Waldron, R. | " | | 10 00 | |
| Commanda, A. | Cleaning | | 2 50 | |
| Matheson, G. | Janitor | | 38 71 | |
| Pert, W. | " | | 427 74 | |
| Boyne, B. | " | | 253 55 | |
| Drake, E. | " | | 110 00 | |
| Cummings, A. | Iceman | | 439 36 | |
| | | | | $13,460 50 |

*Shelter Stations.*

| | | | | |
|---|---|---|---|---|
| Daly, J. | Attendant | | $60 00 | |
| Hoffman, Mrs. R. | " | | 80 00 | |
| Fordyce, G. | " | | 40 00 | |
| Schlievert, G. | " | | 120 00 | |
| Johnston, O. | " | | 41 61 | |
| Harbridge, Mrs. L. | " | | 5 00 | |
| Labelle, F. | " | | 60 00 | |
| Burnett, W. | " | | 120 00 | |
| Mitchell, J. B. | " | | 120 00 | |
| Fillmore, J. | " | | 113 00 | |
| Goodfellow, Mrs. R. | " | | 55 00 | |
| Bertrand, W. | " | | 100 00 | |
| Clark, T. | " | | 30 00 | |
| Bateman, R. | " | | 50 00 | |
| Tivy, Mrs. K. | " | | 20 00 | |
| Delledonne, J. | " | | 18 39 | |
| | | | | $1,033 00 |

*Conductors.*

| | | | | |
|---|---|---|---|---|
| Nidd, J. T. | Conductor | | $1,450 27 | |
| Newell, A. | " | | 1,645 54 | |
| Murray, P. J. | " | | 1,606 02 | |
| Graham, H. F. | " | | 1,630 06 | |
| Flegg, R. | " | | 187 86 | |
| McParland, T. J. | " | | 1,642 81 | |
| Hamilton, T. | " | | 1,706 42 | |
| Gillespie, J. | " | | 1,859 66 | |
| Sheppard, E. E. | " | | 1,718 33 | |
| Jessup, J. H. | " | | 1,794 79 | |
| McTavish, R. | " | | 1,764 90 | |
| Ressor, A. P. | " | | 1,889 64 | |
| McKerrow, G. W. | " | | 2,116 79 | |
| Cockerline, J. | " | | 1,353 18 | |
| Miller, A. | " | | 2,008 37 | |
| Lillie, O. | " | | 1,662 24 | |
| Nixon, W. | " | | 1,475 18 | |
| Rouble, A. | " | | 1,818 00 | |
| Sullivan, H. | " | | 1,234 15 | |
| Thomas, H. | " | | 1,616 08 | |
| McConomy, E. J. | " | | 1,771 17 | |
| Connell, J. S. | " | | 1,271 27 | |
| Beaudet, J. A. | " | | 1,342 35 | |
| Stoughton, N. | " | | 1,611 39 | |

*Conductors.—Continued.*

| | | | | |
|---|---|---|---|---|
| Steinhoff, J. A. | Conductor | | $1,741 50 | |
| Loney, W. | " | | 1,395 69 | |
| Miller, J. S. | " | | 1,769 70 | |
| Campbell, W. A. | " | | 731 90 | |
| Atkinson, H. | " | | 1,445 88 | |
| Aubrey, N. | " | | 1,550 51 | |
| Bradford, J. N. | " | | 1,093 41 | |
| Archer, H. A. | " | | 1,326 52 | |
| Willoughby, J. A. | " | | 422 70 | |
| Treacy, W. L. | " | | 786 60 | |
| Kennedy, J. | " | | 1,275 25 | |
| McCallum, F. | " | | 653 65 | |
| Bourett, J. W. | " | | 1,280 12 | |
| Leckie, J. W. | " | | 1,348 81 | |
| Copps, R. W. | " | | 13 63 | |
| Francis, S. F. | " | | 359 37 | |
| Kerr, C. D. | " | | 519 80 | |
| Dubois, C. H. | " | | 365 20 | |
| St. Louis, F. | " | | 1,537 04 | |
| Richmond, J. N. | " | | 152 57 | |
| Robinson, E. | " | | 1,208 75 | |
| Gatacre, G. W. | " | | 89 17 | |
| Ryan, H. | " | | 245 92 | |
| Holland, J. | " | | 228 21 | |
| Lett, W. | " | | 316 74 | |
| Doherty, T. J. | " | | 4 00 | |
| King, A. W. | " | | 209 96 | |
| Sullivan, K. | " | | 2 00 | |
| Manning, W. | " | | 454 76 | |
| Pringle, G. | " | | 69 72 | |
| King, E. J. | " | | 46 94 | |
| Cameron, A. | " | | 17 10 | |
| McKerrow, J. O. | " | | 991 70 | |
| Campbell, T. J. | " | | 186 20 | |
| Castor, D. | " | | 4 18 | |
| Dorschner, A. | " | | 31 27 | |
| | | | | $62,052 94 |

*Brakemen.*

| | | | | |
|---|---|---|---|---|
| Lee, G. | Brakeman | | 980 83 | |
| McQuestion, W. A. | " | | 955 40 | |
| Edwards, A. S. | " | | 1,039 15 | |
| Seguin, J. W. | " | | 1,105 55 | |
| Downey, M. J. | " | | 1,123 49 | |
| Coburn, G. | " | | 1,029 07 | |
| Cockerline, A. S. | " | | 952 36 | |
| Thurlow, J. E. | " | | 1,015 97 | |
| Aubry, H. J. | " | | 1,022 58 | |
| Durack, D. B. | " | | 1,042 98 | |
| Winters, R. W. | " | | 1,218 17 | |
| Kilroy, B. | " | | 997 38 | |
| Biers, B. W. | " | | 945 53 | |
| Thompson, W. G. | " | | 535 47 | |
| Allan, J. | " | | 998 72 | |
| Barrett, P. J. | " | | 567 00 | |
| Francis, S. F. | " | | 1,056 00 | |
| Robinson, E. | " | | 301 77 | |
| Holland, J. | " | | 1,080 56 | |
| Lett, W. | " | | 1,072 48 | |
| Dorschner, A. | " | | 1,269 86 | |
| Ryan, H. | " | | 960 28 | |
| Edwards, W. J. | " | | 1,446 09 | |
| Manning, W. | " | | 732 43 | |
| Sullivan, K. | " | | 1,372 92 | |
| Ferrier, G. | " | | 1,277 42 | |
| Fleming, R. | " | | 1,281 51 | |

*Brakemen.—Continued.*

| | | |
|---|---|---|
| Dougherty, T. J. | Brakeman | $1,089 38 |
| Fischer, R. | " | 1,189 40 |
| Bailey, J. | " | 1,221 33 |
| Copps, R. W. | " | 1,481 57 |
| McLeod, J. | " | 270 77 |
| Gauthier, A. | " | 1,105 78 |
| Clark, C. | " | 613 86 |
| Farmer, A. | " | 1,031 17 |
| Farmer, W. | " | 1,043 29 |
| Pigeau, E. J. | " | 1,152 61 |
| McAughey, T. J. | " | 841 60 |
| Tetreau, E. | " | 1,125 90 |
| Scott, F. J. | " | 1,165 51 |
| Kerr, C. D. | " | 763 01 |
| Kelly, H. | " | 649 72 |
| McCallum, F. | " | 569 80 |
| Kennedy, J. | " | 399 25 |
| Larone, A. T. | " | 1,166 31 |
| Spencer, W. L. | " | 1,323 51 |
| Fraser, E. | " | 1,135 03 |
| Jewell, J. D. | " | 250 59 |
| Gatacre, G. W. | " | 648 21 |
| St. Louis, F. | " | 257 03 |
| Campbell, W. A. | " | 703 17 |
| McMillan, R. J. | " | 651 48 |
| Stoughton, F. | " | 818 28 |
| James, R. | " | 1,242 00 |
| Chambers, W. H. | " | 1,041 36 |
| Ryan, W. C. | " | 47 40 |
| Wallace, F. | " | 1,016 71 |
| Chase, H. F. | " | 810 20 |
| Fleury, G. | " | 1,096 86 |
| O'Hara, J. | " | 1,146 75 |
| Collins, P. H. | " | 325 30 |
| O'Toole, G. | " | 938 22 |
| Leckie, J. W. | " | 290 46 |
| Foster, F. | " | 1,271 47 |
| Richmond, J. N. | " | 510 73 |
| Treacy, W. L. | " | 711 79 |
| Dubois, C. H. | " | 1,094 10 |
| King, A. W. | " | 1,132 50 |
| King, E. J. | " | 1,306 53 |
| Willoughby, J. A. | " | 243 00 |
| Pringle, N. | " | 1,035 83 |
| Simms, P. | " | 1,008 79 |
| Comerford, D. F. | " | 1,308 54 |
| Thomas, G. | " | 8 12 |
| Taylor, F. H. | " | 224 94 |
| Pringle, G. | " | 1,383 38 |
| McMillan, N. C. | " | 18 13 |
| Moore, W. | " | 510 35 |
| Legary, J. | " | 45 63 |
| Thomas, H. | " | 4 45 |
| Hollands, W. | " | 1,011 09 |
| Archer, H. A. | " | 3 85 |
| Campbell, T. J. | " | 970 90 |
| Aubry, H. H. | " | 380 32 |
| Doyle, H. B. J. | " | 945 80 |
| Coulthard, L. H. | " | 196 01 |
| Venton, W. H. | " | 550 97 |
| Gould, A. A. | " | 450 89 |
| McEachren, A. | " | 1,021 77 |
| Valliere, J. | " | 909 06 |

*Brakemen.—Continued.*

| | | | |
|---|---|---|---|
| Hoffbuhr, W. | Brakeman | $125 | 31 |
| Blair, G. W. | " | 161 | 94 |
| Larocque, E. | " | 252 | 64 |
| Caley, C. | " | 871 | 36 |
| McArthur, N. R. | " | 626 | 97 |
| Comerford, J. | " | 19 | 68 |
| Beaudet, J. A. | " | 294 | 18 |
| Vaillancourt, W. | " | 715 | 47 |
| Martin, T. | " | 61 | 99 |
| McLeod, R. D. | " | 301 | 35 |
| Harwood, A. | " | 32 | 17 |
| Cameron, A. | " | 412 | 82 |
| Belec, D. A. | " | 864 | 69 |
| McMahon, F. | " | 432 | 33 |
| Croghan, J. | " | 14 | 70 |
| Perrault, G. | " | 586 | 02 |
| Castor, D. | " | 340 | 44 |
| Biglow, E. | " | 870 | 01 |
| Wall, F. H. | " | 705 | 59 |
| Peters, H. | " | 4 | 55 |
| Lewis, W. L. | " | 770 | 32 |
| Guertin, H. | " | 125 | 47 |
| Denault, W. | " | 503 | 86 |
| Knapp, F. | " | 4 | 46 |
| McCaughan, L. | " | 875 | 25 |
| Moorehouse, D. | " | 8 | 88 |
| Irvine, A. | " | 363 | 01 |
| Connell, R. T. | " | 432 | 40 |
| Thom, W. | " | 429 | 06 |
| Atkinson, H. | " | 93 | 08 |
| Smith, G. A. | " | 666 | 33 |
| Demore, P. | " | 66 | 77 |
| Hickey, W. | " | 701 | 74 |
| Lennox, S. | " | 580 | 70 |
| Childerhose, W. B. | " | 293 | 14 |
| Peden, A. | " | 441 | 07 |
| Sullivan, H. | " | 509 | 14 |
| Lillie, O. | " | 154 | 85 |
| Bourett, W. J. | " | 507 | 98 |
| Archer, H. | " | 117 | 60 |
| Nixon, W. | " | 214 | 52 |
| Saunders, F. A. | " | 15 | 54 |
| Eheler, E. G. | " | 137 | 18 |
| Edwards, T. | " | 19 | 96 |
| Fisher, W. | " | 96 | 35 |
| O'Connell, J. | " | 80 | 78 |
| Keats, W. | " | 35 | 57 |
| Sharpe, R. M. | " | 68 | 75 |
| Biers, J. | " | 19 | 76 |
| Wagner, H. W. | " | 30 | 35 |
| | | | $92,320 81 |

*Locomotive Engineers.*

| | | | |
|---|---|---|---|
| Morgan, F. | Engineer | $1,922 | 69 |
| Shaw, L. G. | " | 1,893 | 33 |
| Donohue, J. | " | 1,918 | 48 |
| Smith, D. | " | 518 | 84 |
| Fry, J. | " | 1,933 | 89 |
| McLeod, A. | " | 1,979 | 59 |
| Coomb, G. | " | 1,935 | 55 |
| Thomas, W. | " | 1,820 | 78 |
| Millman, W. C. | " | 1,974 | 91 |
| Wilson, J. T. | " | 2,375 | 75 |
| McKaig, S. J. | " | 1,324 | 29 |
| McMillan, N. | " | 2,432 | 09 |
| Currie, N. | " | 2,462 | 93 |
| Johnston, J. C. | " | 1,646 | 12 |

*Locomotive Engineers.—Continued.*

| | | | |
|---|---|---|---|
| Hill, T. H. | Engineer | $2,228 46 | |
| Ross, W. | " | 2,175 46 | |
| Holland, J. | " | 1,407 68 | |
| Newman, A. | " | 1,395 11 | |
| Ward, A. | " | 1,780 28 | |
| McElhaney, H. | " | 1,781 99 | |
| Thomas, F. | " | 2,163 02 | |
| Lackie, S. | " | 1,161 37 | |
| Filiatrault, Z. E. | " | 1,825 02 | |
| Plaus, W. | " | 1,868 83 | |
| Nornabell, E. A. | " | 1,614 31 | |
| Kirk, F. G. | " | 1,503 96 | |
| Langlois, J. | " | 1,555 75 | |
| Nolan, P. B. | " | 2,421 70 | |
| Howard, T. | " | 688 98 | |
| Durkin, J. T. | " | 1,984 24 | |
| Johnston, J. A. | " | 1,964 57 | |
| McKenzie, H. W. | " | 1,679 51 | |
| McGovern, H. E. | " | 2,058 89 | |
| Hermeston, H. | " | 1,788 63 | |
| Morris, J. | " | 1,661 22 | |
| Bedard, S. | " | 1,656 84 | |
| McKerrow, J. E. | " | 692 22 | |
| Reynolds, H. | " | 1,721 34 | |
| Newman, S. B. | " | 1,549 80 | |
| Biggs, J. | " | 1,714 57 | |
| Connell, W. D. | " | 1,301 26 | |
| Copeland, J. E. | " | 1,428 52 | |
| Jackson, I. | " | 1,726 78 | |
| Leishman, E. G. | " | 1,618 83 | |
| Nudds, G. | " | 895 74 | |
| McEwen, S. | " | 1,030 00 | |
| Tripp, G. | " | 570 74 | |
| Vincent, R. | " | 593 61 | |
| McMenemy, A. | " | 488 20 | |
| McKenzie, A. B. | " | 41 66 | |
| Muldoon, T. | " | 46 97 | |
| Bear, B. | " | 447 18 | |
| McElhaney, A. | " | 438 98 | |
| | | | $80,811 46 |

*Locomotive Firemen.*

| | | | |
|---|---|---|---|
| Connell, W. D. | Fireman | $426 06 | |
| Biggs, J. | " | 202 15 | |
| Newman, S. B. | " | 261 96 | |
| Jackson, I. | " | 355 23 | |
| McElhaney, A. | " | 890 79 | |
| McMenemy, A. | " | 876 44 | |
| Vincent, R. | " | 735 82 | |
| Moore, A. | " | 1,060 40 | |
| Lewis, H. | " | 1,444 33 | |
| McEwen, S. | " | 745 02 | |
| McKenzie, A. B. | " | 1,164 71 | |
| Biers, G. | " | 1,315 48 | |
| Beauchamp, H. | " | 1,215 06 | |
| Muldoon, T. | " | 1,322 41 | |
| Anyan, G. W. | " | 955 91 | |
| Yorkston, J. | " | 818 06 | |
| Woollings, T. | " | 1,024 60 | |
| Vreeland, C. | " | 440 84 | |
| McKenney, J. | " | 1,288 06 | |
| Dods, J. | " | 1,474 04 | |
| Byers, P. | " | 1,468 61 | |
| Brooks, G. | " | 1,132 16 | |
| Smith, D. | " | 446 98 | |
| Radford, A. | " | 777 64 | |

*Locomotive Firemen.—Continued.*

| | | |
|---|---|---|
| Gentil, A. | Fireman | $1,116 60 |
| Kelly, H. | " | 1,166 23 |
| Hermeston, H. | " | 74 07 |
| Tripp, G. | " | 885 16 |
| Nudds, G. | " | 656 30 |
| McLeod, J. | " | 111 49 |
| Thompson, H. | " | 18 11 |
| Leishman, E. G. | " | 224 77 |
| Anderson, J. | " | 1,090 35 |
| Grant, A. | " | 910 78 |
| Vernon, A. | " | 1,065 72 |
| Savard, E. | " | 1,180 46 |
| Merritt, L. | " | 592 22 |
| Logan, P. | " | 85 70 |
| Kay, G. R. | " | 38 63 |
| McDonald, M. J. | " | 1,129 86 |
| Haman, C. | " | 119 01 |
| Stonehouse, E. | " | 29 05 |
| James, T. | " | 32 41 |
| McKenney, A. | " | 621 91 |
| Brooks, A. | " | 229 86 |
| Thompson, H. | " | 2 90 |
| Leblanc, J. | " | 3 49 |
| Empie, C .H. | " | 791 68 |
| Bebee, T. E. | " | 880 73 |
| Day, E. | " | 245 36 |
| Drury, H. M. | " | 765 44 |
| Lee, M. | " | 125 40 |
| Guitard, O. | " | 344 31 |
| Carmichael, W. | " | 3 01 |
| Colley, A. J. | " | 5 43 |
| Harrington, F. | " | 33 37 |
| Chambers, J. W. | " | 899 11 |
| Munro, R. | " | 325 35 |
| Toaze, T. A. | " | 142 44 |
| Gagne, L. | " | 42 34 |
| Leduc, E. W. | " | 181 81 |
| Brogan, C. R. | " | 374 05 |
| McLennan, E. | " | 705 30 |
| Litterell, A. H. | " | 34 03 |
| Cook, A. | " | 603 16 |
| O'Connell, W. | " | 1,173 85 |
| Romain, D. C. | " | 865 14 |
| Davis, S. | " | 3 28 |
| McDonald, A. | " | 20 51 |
| Vinette, D. | " | 787 08 |
| Kehoe, D. | " | 69 03 |
| Gaudette, L. | " | 21 46 |
| Woods, W. | " | 486 84 |
| Gingras, M. | " | 355 43 |
| Guitard, L. | " | 289 19 |
| Leblanc, P. | " | 337 31 |
| Davis, S. | " | 3 75 |
| Mann, D. | " | 191 57 |
| Dorey, T. | " | 41 26 |
| Tackaberry, J. | " | 260 64 |
| Humphrey, W. | " | 757 70 |
| Gibson, W. | " | 166 59 |
| Leahy, V. | " | 326 62 |
| Quinn, D. | " | 621 61 |
| Brunsley, A. | " | 4 03 |
| Reynolds, J. F. | " | 115 49 |
| Belanger, C. | " | 4 64 |

*Locomotive Firemen.—Continued.*

| | | | | |
|---|---|---|---|---|
| Ryan, J. | Fireman | | $515 03 | |
| Quinn, P. | " | | 894 02 | |
| Gard, W. I. | " | | 642 43 | |
| Leblanc, J. A. | " | | 4 30 | |
| Haskins, G. K. | " | | 162 28 | |
| Fichault, E. | " | | 114 08 | |
| Suffron, J. | " | | 9 81 | |
| Neal, F. | " | | 24 66 | |
| Jowsey, N. T. | " | | 61 45 | |
| Harman, W. | " | | 68 78 | |
| Clark, F. | " | | 520 45 | |
| Mahaffy, A. | " | | 585 42 | |
| Hannan, W. | " | | 72 63 | |
| Lowrey, R. A. | " | | 71 17 | |
| Tignanelli, F. | " | | 10 52 | |
| Lacey, C. F. | " | | 6 00 | |
| Raulston, O. | " | | 198 81 | |
| Leblanc, J. | " | | 21 55 | |
| Floyd, E. | " | | 52 15 | |
| Nevill, S. | " | | 42 50 | |
| Solway, E. | " | | 3 04 | |
| Baker, C. | " | | 3 23 | |
| McKerrow, J. E. | " | | 123 34 | |
| McKenzie, H. W. | " | | 113 28 | |
| Arquette, S. | " | | 81 89 | |
| Lind, T. | " | | 3 22 | |
| Britton, L. | " | | 7 94 | |
| | | | | $51,047 16 |

*Telephone and Telegraph Department.*

| | | | |
|---|---|---|---|
| Kelly, W. J. | S. T. and T. | $1,900 00 | |
| Brown, C. A. | Stenographer | 560 00 | |
| Ferguson, L. M. | Inspector | 1,100 00 | |
| Picard, P. | Lineman | 986 41 | |
| Germain, E. | " | 7 50 | |
| Picard, H. | " | 10 00 | |
| | | | $4,563 91 |

*Commercial Telegraph and Telephone Offices.*

*Cobalt—Elk Lake—Gowganda and Cochrane.*

| | | | |
|---|---|---|---|
| Way, D. H. | Manager | $15 00 | |
| Bunyan, M. | Opr. and Acct. | 827 58 | |
| Grace, P. W. | Operator | 503 22 | |
| McWilliams, M. | " | 19 96 | |
| Oulette, A. | " | 8 23 | |
| Makeen, E. G. | " | 60 72 | |
| Cattley, B | " | 113 19 | |
| Jackson, W. | " | 83 07 | |
| McLaughlin, J. | Accountant | 13 50 | |
| Hylands, L. | Clerk | 44 72 | |
| Asseltine, G. | " | 21 94 | |
| Simpkins, W. | Messenger | 325 00 | |
| Way, W. K. | " | 4 35 | |
| Maher, E. | " | 12 58 | |
| Harris, E. | " | 4 90 | |
| Strickland, A. | " | 6 00 | |
| Belanger, O. | Manager | 15 00 | |
| Tremblay, E. | Operator | 410 74 | |
| James, M. | " | 25 59 | |
| Craig, W. H. | " | 300 00 | |
| Sullivan, N. J. | Lineman | 900 00 | |
| Aubert, R. A. | " | 14 52 | |
| Daly, R. W. | Manager | 15 00 | |
| Hafin, R. C. | Operator | 868 93 | |

*Commercial Telegraph and Telephone Offices.—Continued.*

*Cobalt—Elk Lake—Gowganda and Cochrane.—Continued.*

| | | | |
|---|---|---|---|
| Stewart, R. | Operator | $3 33 | |
| Kert, A. | Clerk | 15 00 | |
| Dunn, A. | " | 115 00 | |
| Jamieson, E. | " | 80 00 | |
| Williams, D. | Messenger | 1 94 | |
| Waldron, R. W. | " | 30 00 | |
| Williams, J. | " | 90 00 | |
| | | | $4,949 01 |

*Telephone and Telegraph Linemen, Englehart and Cochrane and Extra Gang.*

| | | | |
|---|---|---|---|
| Simpson, G. M. | Lineman | $542 29 | |
| Loisel, S. | " | 974 03 | |
| McLellan, J. | " | 616 65 | |
| Ambeault, E. | Foreman | 842 00 | |
| Linemen, Groundsmen, etc. | | 4,127 64 | $7,102 61 |

*Office of Chief Engineer and Superintendent of Maintenance.*

| | | | |
|---|---|---|---|
| Clement, S. B. | C. E. & S. M. | $4,140 00 | |
| Dickson, G. H. | Chief Draughtsman | 1,705 00 | |
| Angus, G. P. | Draughtsman | 111 29 | |
| Scott, C. R. | " | 385 00 | |
| Burt, T. K. | " | 46 45 | |
| Johnston, W. I. | Chief Clerk | 1,525 00 | |
| Young, J. | Clerk | 925 00 | |
| McIntosh, R. | " | 750 00 | |
| Cavanagh, H. W. | " | 185 00 | |
| Huntington, R. S. | Blueprinter | 276 67 | |
| McGuire, A. | " | 12 00 | |
| Morgan, F. | " | 45 50 | |
| Snyder, H. H. | " | 84 17 | |
| Armstrong, T. | " | 37 50 | |
| Sharpe, H. W. | " | 8 00 | |
| Morgan, N. L. | Stenographer | 600 16 | |
| Lemieux, G. E. | " | 585 00 | |
| Reynolds, E. | " | 17 03 | |
| Sherman, M. | " | 81 29 | |
| O'Donnell, J. A. | Clerk | 137 42 | $11,657 48 |

*Greenhouse, Englehart.*

| | | | |
|---|---|---|---|
| Kerrigan, D. | Gardener | $840 00 | |
| Ward, A. | " | 720 00 | |
| Price, T. | Laborer | 4 60 | |
| Phillips, W. | " | 4 40 | |
| Antram, W. | " | 54 00 | |
| Druce, P. | " | 5 00 | |
| Cannon, W. | " | 249 92 | |
| Graham, T. | " | 27 40 | |
| Simpkins, W. | " | 300 45 | |
| Danetun, J. | " | 8 00 | |
| Stevenson, G. | " | 11 00 | |
| Anyan, W. | " | 68 20 | |
| Remus, W. | " | 136 00 | |
| Garovitch, M. | Teaming | 93 45 | |
| Preston, G. | " | 9 00 | |
| Rutledge, W. | " | 52 50 | $2,583 92 |

*Office of Master Mechanic.*

| | | |
|---|---|---|
| Ross, T. | Master Mechanic | $2,200 00 |
| Douglass, J. J. | Road Foreman | 1,825 00 |
| Rodgers, H. L. | Mechanical Engineer | 1,600 00 |
| Battley, C. | A. B. Inspector | 1,550 00 |

*Office of Master Mechanic.—Continued.*

| | | | |
|---|---|---|---|
| McRoberts, A. A. | Draughtsman | $1,165 00 | |
| Ellwood, R. E. | Chief Clerk | 1,065 00 | |
| Raymond, J. C. | Stenographer | 695 00 | |
| Leppan, S. | Clerk | 177 10 | |
| Leppan, F. | " | 127 42 | |
| Lye, A. L. | " | 191 94 | |
| Rousseau, E. J. | " | 135 48 | |
| Corbeil, I. | " | 35 48 | |
| Cavanagh, H. W. | Timekeeper | 111 85 | |
| Corbeil, A. | " | 248 06 | $11,127 33 |

*Motive Power Department, North Bay.*

| | | | |
|---|---|---|---|
| Black, W. J. | Foreman | $1,610 00 | |
| Machinists | | 18,779 15 | |
| Carpenters | | 1,827 74 | |
| Painters | | 1,268 76 | |
| Other shopmen | | 50,992 36 | $74,478 01 |

*Car Department, North Bay.*

| | | | |
|---|---|---|---|
| Beath, J. | Foreman | $1,250 00 | |
| Carpenters | | 3,884 84 | |
| Other employees | | 26,413 73 | $31,548 57 |

*Carpenter Shop, North Bay.*

| | | | |
|---|---|---|---|
| Williamson, R. | Foreman | $1,490 00 | |
| Carpenters | | 13,524 77 | |
| Painters | | 9,578 07 | |
| Other shopmen | | 11,902 35 | $36,495 19 |

*Motive Power and Car Departments, Cobalt.*

| | | | |
|---|---|---|---|
| Sibbold, T. | Car Inspector | $1,090 08 | $1,090 08 |

*Motive Power and Car Departments, Elk Lake.*

| | | | |
|---|---|---|---|
| Other shopmen | | $1,888 77 | $1,888 77 |

*Motive Power and Car Departments, Englehart.*

| | | | |
|---|---|---|---|
| Clarke, R. | Foreman | $1,490 00 | |
| Machinists | | 3,458 37 | |
| Other shopmen | | 21,664 71 | $26,613 08 |

*Motive Power and Car Departments, Iroquois Falls.*

| | | | |
|---|---|---|---|
| Other Shopmen | | $1,594 20 | $1,594 20 |

*Motive Power and Car Departments, Timmins.*

| | | | |
|---|---|---|---|
| Thompson, E. | Foreman | $1,200 00 | |
| Machinists | | 22 91 | |
| Other shopmen | | 8,224 92 | $9,447 83 |

*Motive Power and Car Departments, Cochrane.*

| | | | |
|---|---|---|---|
| Moth, A. T. | Foreman | $1,300 00 | |
| Machinists | | 859 63 | |
| Other shopmen | | 14,414 33 | $16,573 96 |

*Resident Engineer, Locating Engineer and Assistants.*

| | | | |
|---|---|---|---|
| Boast, R. G. | Resident Engineer | $1,585 00 | |
| Maher, W. R. | Locating Engineer | 1,800 00 | |
| Watson, C. G. | Inst. man | 1,045 00 | |

*Resident Engineer, Locating Engineer and Assistants.—Continued.*

| | | | |
|---|---|---|---|
| Sinton, J. | Inst. man | $999 33 | |
| Angus, G. P. | " | 300 00 | |
| Fraser, A. A. | " | 576 58 | |
| Holbrook, B. | Rodman | 21 00 | |
| Allan, H. | Rodman and Inspector | 526 66 | |
| O'Donnell, J. A. | Rodman | 241 50 | |
| Hill, L. | Chainman | 48 00 | |
| Sharpe, H. W. | " | 40 00 | |
| Samuel, M. | " | 193 33 | |
| Edwards, R. | " | 56 22 | |
| Patterson, E. L. | " | 161 25 | |
| Flannery, W. | " | 44 97 | |
| Morgan, A. | Axeman | 139 36 | |
| Young, C. | " | 22 00 | |
| Audrey, T. H. | " | 46 67 | |
| McGinnis, C. | " | 9 33 | |
| McGuire, A. | " | 161 67 | |
| Lynch, T. | " | 7 00 | |
| West, C. | Cook | 477 73 | |
| Martin, H. | Inspector | 159 00 | |
| | | | $8,661 60 |

*Office of B. and B. Master.*

| | | | |
|---|---|---|---|
| Oldham, W. J. | B. & B. M. | $1,850 00 | |
| Stafford, E. J. | Clerk | 985 00 | |
| | | | $2,835 00 |

*Water Service.*

| | | | |
|---|---|---|---|
| Day, H. | Inspector | $1,000 00 | |
| Pumpmen, etc. | | 8,330 11 | |
| | | | $9,330 11 |

*B. and B. Department, Extra Gangs.*

| | | | |
|---|---|---|---|
| Carpenters | | $35,174 52 | |
| Others | | 21,044 01 | |
| | | | $56,218 53 |

*Office of General Roadmaster.*

| | | | |
|---|---|---|---|
| Young, Wm. | General Roadmaster | $1,980 00 | |
| Jacobs, G. E. | Stenographer | 330 00 | |
| Imeson, W. C. | " | 152 58 | |
| | | | $2,462 58 |

*Track Supervisors.*

| | | | |
|---|---|---|---|
| Faught, S. J. | Supervisor | $1,485 00 | |
| Drinkwater, J. | " | 1,620 00 | |
| Switzer, W. | " | 409 35 | |
| Belliveau, J. | " | 39 19 | |
| | | | $3,553 54 |

*Track Section Gangs.*

| | | | | |
|---|---|---|---|---|
| Section No. 1 | Foreman | $1,004 71 | | |
| | Laborers | 9,628 14 | $10,632 85 | |
| " 2 | Foreman | 858 33 | | |
| | Laborers | 2,037 02 | 2,895 35 | |
| " 3 | Foreman | 895 77 | | |
| | Laborers | 2,175 31 | 3,071 08 | |
| " 4 | Foreman | 881 45 | | |
| | Laborers | 1,680 88 | 2,562 33 | |
| " 5 | Foreman | 883 54 | | |
| | Laborers | 1,933 15 | 2,816 69 | |

*Track Section Gangs.—Continued.*

| | | | | | |
|---|---|---|---|---|---|
| Section | No. 6 | Foreman | | $883 19 | |
| | | Laborers | | 1,365 35 | $2,248 54 |
| " | 7 | Foreman | | 881 57 | |
| | | Laborers | | 1,720 83 | 2,602 40 |
| " | 8 | Foreman | | 901 12 | |
| | | Laborers | | 1,792 84 | 2,693 96 |
| " | 9 | Foreman | | 906 69 | |
| | | Laborers | | 1,659 29 | 2,565 98 |
| " | 10 | Foreman | | 886 17 | |
| | | Laborers | | 1,586 74 | 2,472 91 |
| " | 11 | Foreman | | 899 12 | |
| | | Laborers | | 1,731 49 | 2,630 61 |
| " | 12 | Foreman | | 882 31 | |
| | | Laborers | | 2,100 96 | 2,983 27 |
| " | 13 | Foreman | | 845 56 | |
| | | Laborers | | 1,969 94 | 2,815 50 |
| " | 14 | Foreman | | 879 78 | |
| | | Laborers | | 2,098 35 | 2,978 13 |
| " | 15 | Foreman | | 919 40 | |
| | | Laborers | | 2,015 51 | 2,934 91 |
| " | 16 | Foreman | | 939 78 | |
| | | Laborers | | 1,434 56 | 2,374 34 |
| " | 17 | Foreman | | 903 61 | |
| | | Laborers | | 3,061 94 | 3,965 55 |
| " | 18 | Foreman | | 935 29 | |
| | | Laborers | | 2,856 17 | 3,791 46 |
| " | 19 | Foreman | | 1,034 04 | |
| | | Laborers | | 2,749 24 | 3,783 28 |
| " | 20 | Foreman | | 875 75 | |
| | | Laborers | | 2,173 38 | 3,049 13 |
| " | 21 | Foreman | | 881 45 | |
| | | Laborers | | 2,370 65 | 3,252 10 |
| " | 22 | Foreman | | 931 90 | |
| | | Laborers | | 2,129 99 | 3,061 89 |
| " | 23 | Foreman | | 1,094 43 | |
| | | Laborers | | 9,632 52 | 10,726 95 |
| " | 24 | Foreman | | 875 15 | |
| | | Laborers | | 2,077 74 | 2,952 89 |
| " | 25 | Foreman | | 852 07 | |
| | | Laborers | | 2,062 81 | 2,914 88 |
| " | 26 | Foreman | | 886 99 | |
| | | Laborers | | 1,855 21 | 2,742 20 |
| " | 27 | Foreman | | 887 84 | |
| | | Laborers | | 2,074 39 | 2,962 23 |
| " | 28 | Foreman | | 876 70 | |
| | | Laborers | | 1,399 71 | 2,276 41 |
| " | 29 | Foreman | | 928 70 | |
| | | Laborers | | 1,257 78 | 2,186 48 |
| " | 30 | Foreman | | 873 54 | |
| | | Laborers | | 1,398 23 | 2,271 77 |
| " | 31 | Foreman | | 882 22 | |
| | | Laborers | | 2,507 69 | 3,389 91 |
| " | 32 | Foreman | | 867 38 | |
| | | Laborers | | 2,148 12 | 3,015 50 |
| " | 33 | Foreman | | 921 80 | |
| | | Laborers | | 2,132 06 | 3,053 86 |
| " | 34 | Foreman | | 891 35 | |
| | | Laborers | | 2,469 85 | 3,361 20 |
| " | 35 | Foreman | | 949 14 | |
| | | Laborers | | 2,140 70 | 3,089 84 |
| " | 36 | Foreman | | 866 86 | |
| | | Laborers | | 2,016 45 | 2,883 31 |
| " | 37 | Foreman | | 844 62 | |
| | | Laborers | | 1,705 05 | 2,549 67 |
| " | 38 | Foreman | | 861 21 | |
| | | Laborers | | 1,484 05 | 2,345 26 |

*Track Section Gangs.—Continued.*

| | | | | |
|---|---|---|---|---|
| Section No. 39 | Foreman | $1,158 44 | | |
| | Laborers | 6,970 30 | $8,128 74 | |
| " 40 | Foreman | 877 29 | | |
| | Laborers | 2,362 47 | 3,239 76 | |
| " 41 | Foreman | 855 53 | | |
| | Laborers | 1,593 69 | 2,449 22 | |
| " 42 | Foreman | 877 14 | | |
| | Laborers | 1,897 35 | 2,774 49 | |
| " 43 | Foreman | 888 96 | | |
| | Laborers | 1,800 57 | 2,689 53 | |
| " 44 | Foreman | 861 18 | | |
| | Laborers | 2,153 17 | 3,014 35 | |
| " 45 | Foreman | 913 41 | | |
| | Laborers | 2,108 26 | 3,021 67 | |
| " 46 | Foreman | 950 33 | | |
| | Laborers | 3,310 19 | 4,260 52 | |
| " 47 | Foreman | 869 89 | | |
| | Laborers | 1,184 13 | 2,054 02 | |
| " 48 | Foreman | 851 27 | | |
| | Laborers | 1,072 97 | 1,924 24 | |
| " 49 | Foreman | 886 89 | | |
| | Laborers | 1,810 96 | 2,697 85 | |
| " 50 | Foreman | 1,005 13 | | |
| | Laborers | 2,084 35 | 3,089 48 | |

*Road Department, Extra Gangs.*

| | | | |
|---|---|---|---|
| Extra Gang No. 1 | Foreman | 1,745 00 | |
| | Laborers | 13,644 62 | 15,389 62 |
| " 2 | Foreman | 1,192 05 | |
| | Laborers | 4,868 78 | 6,060 83 |
| " 3 | Foreman | 1,185 70 | |
| | Laborers | 8,698 00 | 9,883 70 |
| " 4 | Foreman | 1,824 70 | |
| | Laborers | 13,292 79 | 15,117 49 |
| " 5 | Foreman | 958 21 | |
| | Laborers | 4,789 45 | 5,747 66 |
| " 6 | Foreman | 1,077 31 | |
| | Laborers | 5,812 44 | 6,889 75 |
| " 7 | Foreman | 784 50 | |
| | Laborers | 7,328 21 | 8,112 71 |
| " 8 | Foreman | 616 87 | |
| | Laborers | 1,780 65 | 2,397 52 |
| " 9 | Foreman | 532 34 | |
| | Laborers | 4,023 82 | 4,556 16 |
| " 10 | Foreman | 820 82 | |
| | Laborers | 5,007 06 | 5,827 88 |
| " 11 | Foreman | 707 71 | |
| | Laborers | 2,192 84 | 2,900 55 |
| " 12 | Foreman | 714 51 | |
| | Laborers | 3,104 28 | 3,818 79 |
| " 13 | Foreman | 558 98 | |
| | Laborers | 1,249 62 | 1,808 60 |
| " 14 | Foreman | 274 47 | |
| | Laborers | 724 65 | 999 12 |
| " 15 | Foreman | 136 87 | |
| | Laborers | 970 39 | 1,107 26 |

*Special Payroll, Donations to Employees Enlisted for Overseas Service.*

| | | |
|---|---|---|
| Mitchell, R. H. | A. & C. A. | $380 00 |
| McCausland, J. H. | Clerk | 86 25 |
| Keeler, S. T. | " | 183 75 |
| Oulette, T. | " | 60 00 |
| Murphy, C. W. | " | 45 00 |
| Campbell, K. | " | 75 00 |

*Special Payroll, Donations, etc.—Continued.*

| | | |
|---|---|---|
| Beaton, W. S. | Clerk | $40 00 |
| Sherman, E. L. | " | 55 00 |
| Giroux, C. A. | " | 55 00 |
| McGill, R. | " | 75 00 |
| Kelly, T. J. | " | 51 66 |
| Johnston, H. G. | " | 40 00 |
| LeGallais, F. G. | Operator | 95 00 |
| Griffiths, G. | Checker | 171 00 |
| James, V. M. | " | 50 00 |
| Relph, E. | " | 150 00 |
| Rogers, A. E. | " | 186 00 |
| Archambault, O. | " | 35 00 |
| Smith, A. R. | " | 58 00 |
| Saunders, L. H. | Clerk | 40 00 |
| Howard, J. E. | " | 52 50 |
| Duncan, G. G. | " | 57 50 |
| Webber, W. S. | " | 50 00 |
| Chamberlain, S. | " | 57 50 |
| Stuckey, H. | " | 62 72 |
| Bell, R. | Checker | 150 00 |
| Borland, A. | Clerk | 57 33 |
| White, G. J. | Baggageman | 214 98 |
| Moore, G. E. | Clerk | 110 00 |
| Brown, R. M. | Baggageman | 82 50 |
| Harris, J. B. | Shed Foreman | 65 00 |
| Ranstead, T. | Call Boy | 25 00 |
| Soper, C. W. | Checker | 55 32 |
| Fox, G. | Trucker | 141 00 |
| Jones, C. S. | Clerk | 130 00 |
| Gray, E. | Checker | 144 60 |
| Knapp, F. | Baggageman | 165 00 |
| Mitchell, A. B. | Relv. Agt. | 92 50 |
| Jardine, A. | Operator | 75 47 |
| Wright, W. A. | Clerk | 50 00 |
| Sproule, R. T. | Shed Foreman | 53 13 |
| Mortson, N. E. | Clerk | 27 50 |
| Saunders, F. A. | Brakeman | 229 50 |
| Ryan, W. C. | " | 68 17 |
| Gatacre, G. W. | " | 279 32 |
| McAughey, T. J. | " | 214 62 |
| Kelly, H. | " | 51 15 |
| McMillan, R. J. | " | 132 27 |
| Shepherd, E. C. | " | 77 87 |
| Clarke, C. | " | 101 06 |
| Yorkston, J. | Fireman | 98 77 |
| Simpson, G. M. | Lineman | 167 86 |
| Huntington, R. S. | Blueprinter | 95 00 |
| Sale, H. | Draughtsman | 85 00 |
| Smith, C. | Clerk | 41 96 |
| English, J. | Loader | 164 91 |
| White, R. M. | Checker | 56 00 |
| Fetterly, G. H. | Apprentice | 50 56 |
| White, J. | " | 59 18 |
| Charnock, W. | Helper | 83 22 |
| Parker, G. M. | Boilermaker | 195 00 |
| Barrand, W. A. | Helper | 75 00 |
| Davis, S. | Tenderman | 227 91 |
| Cadden, C. A. | Machinist | 154 18 |
| McCarthy, L. | Helper | 38 06 |
| Angus, C. | Repairer | 73 18 |
| Rowe, G. | " | 59 80 |
| Atkins, S. J. | Inspector | 232 00 |
| Louden, J. | " | 227 04 |
| Gould, A. G. | " | 57 31 |
| Corbeil, I. | A. B. Repairer | 116 52 |
| Wilson, J. L. | Painter | 90 58 |

*Special Payroll, Donations, etc.—Continued.*

| | | | |
|---|---|---|---|
| McCubbin, M. | Carpenter | $241 44 | |
| Wicks, H. | " | 227 64 | |
| Webster, J. | " | 189 70 | |
| Newberry, H. | Painter | 140 94 | |
| Grieve, A. | Helper | 111 48 | |
| Antram, W. H. | Cleaner | 126 50 | |
| Wallace, F. J. | " | 84 82 | |
| Aubert, R. A. | Stationary Engineer | 160 76 | |
| Holbrook, B. | Rodman | 45 00 | |
| Tibbles, A. H. | Bridgeman | 241 44 | |
| Grant, J. W. | " | 66 22 | |
| Kelly, J. | Cook | 45 00 | |
| Jacob, G. E. A. | Stenographer | 60 00 | |
| Donaldson, J. | Sectionman | 150 42 | |
| Papciak, H. | " | 24 95 | |
| Gillespie, C. | Cook | 59 53 | |
| Jones, R. V. | Clerk | 60 00 | |
| Whiteside, W. | Mail Clerk | 30 00 | 9,347 01 |
| Total payroll | | | $1,127,885 74 |

Potatoes and Oats on Mr. Wm. Schell's Farm. North half Lot 1, Con. 4, Dack Township (Mail received at Englehart.)

## TEMISKAMING AND NORTHERN ONTARIO RAILWAY.

### EXPENDITURE FOR FISCAL YEAR, 1916.

AMERICAN RAILWAY ASSOCIATION, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56597—Car service and per diem rules | $0 80 | |
| 57739—Dues, assessments and copies of proceedings | 41 25 | |
| 57890—Car service and per diem rules | 55 | |
| 58586— " " " | 1 05 | |
| 59143— " " " | 80 | |
| 60403—Rule books | 4 00 | |
| 59992—Assessment No. 51 | 21 28 | |
| | | $69 73 |

ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, TOPEKA, KANSAS.

| | | |
|---|---|---|
| 56615—Car repairs | $13 25 | |
| 56814—Car service balance | 25 20 | |
| 57266—Car repairs | 1 22 | |
| 58137—Car service balance | 31 50 | |
| 58038— " " | 28 80 | |
| 59013—Claim No. 10700—O/c weight silver ore | 3 68 | |
| 59195—Car service balance | 72 90 | |
| 59469—Car repairs | 4 59 | |
| 59016—Claim No. 10635—O/c weight silver ore | 3 10 | |
| 59222—Car repairs | 5 06 | |
| 59514—Car service balance | 64 80 | |
| 60111— " " | 97 65 | |
| 60371—Ticket balance | 46 97 | |
| 59930—Car repairs | 3 58 | |
| 60396—Car service balance | 96 75 | |
| 61443—Claim No. 11190—Prop'n excess weight silver ore | 3 34 | |
| 61655—Car service balance | 86 40 | |
| 61086—Car repairs | 4 24 | |
| 61306—Claim No. 11610—O/c weight silver ore | 3 87 | |
| 61836—Car repairs | 23 96 | |
| 62070—Car service balance | 29 25 | |
| 62771— " " | 30 15 | |
| 63390— " " | 15 30 | |
| | | $695 56 |

ASSOCIATION OF FIRE CHIEFS, TORONTO.

| | | |
|---|---|---|
| 56689—Advertising | $10 00 | |
| | | $10 00 |

ALLEN MANUFACTURING CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 57007—Laundry | $15 89 | |
| 57124— " | 27 01 | |
| 57824— " | 7 67 | |
| 58098— " | 8 31 | |
| 60757— " | 14 65 | |
| 60068— " | 7 82 | |
| 60786— " | 2 14 | |
| | | $83 49 |

S. APPLETON (M. M. DEPT.), COCHRANE, ONT.

| | | |
|---|---|---|
| 57051—Travelling expenses | $0 50 | |
| | | $0 50 |

THE ANN ARBOR RAILROAD COMPANY, TOLEDO, OHIO.

| | | |
|---|---|---|
| 57095—Car repairs and duty on parts | $18 57 | |
| 58044—Car service balance | 8 55 | |
| 59356—Car repairs | 98 | |
| 59522—Car service balance | 4 05 | |
| 59932—Car repairs | 2 05 | |
| 60404—Car service balance | 3 60 | |
| 61359—Car repairs | 7 63 | |
| 61898— " | 1 29 | |
| 62445— " | 4 31 | |
| 63398—Car service balance | 18 90 | |
| 63586—Car repairs | 2 68 | |
| 63732— " | 85 | |
| | | $73 46 |

THE ART METROPOLE, TORONTO.

| | | |
|---|---|---|
| 57133—Paints, crayons and erasers | $3 16 | |
| 57338—Detail paper | 3 60 | |
| 57773—Tacks, pencils and B. P. paper | 15 44 | |
| 58274—Draughtmen's material | 98 03 | |
| 58721—Level Rod cloths, sepia paper | 18 39 | |
| 59002—Draughting supplies | 40 22 | |
| 60467—Paper, pencils, felt | 92 68 | |
| 60296—Tracing paper, tacks and pens | 10 49 | |
| 60672—Pencils, linen | 41 44 | |
| 60864—Erasers | 1 28 | |
| 61563—Vermilion | 30 | |
| 61474—Pencils, paper | 54 81 | |
| 62236—Transit repaired | 13 00 | |
| 63034—Pencils, linen, paper, etc. | 84 44 | |
| | | $477 28 |

AMERICAN HOIST & DERRICK CO., ST. PAUL, MINN.

| | | |
|---|---|---|
| 57135—Repair parts | $5 70 | |
| | | $5 70 |

THE ACME MACHINERY COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 57137—Standard caps | $10 20 | |
| | | $10 20 |

ABITIBI POWER & PAPER CO., LIMITED, MONTREAL, P.Q.

| | |
|---|---|
| 57335—Claims Nos. 10528, 10355 and 10198—Refund on construction material, refund of demurrage | $394 36 |
| 57024—Claim No. 9344—O/c rate pulpwood | 369 73 |
| 57036*a*—Claims Nos. 10310, 10311, 10354, 10535—Rebate on construction material, o/c rate pulpwood | 351 32 |
| 58009—Claims Nos. 10056 and 10318—Refund of war tax and entry fee collected in error | 3 39 |
| 57888—Water supplied | 70 20 |
| 57974—Claims Nos. 10514, 10869, 10534, 10731, 10523, 10055 and 9460—O/c weight lumber, o/c rate on wood pulp | 399 75 |
| 58883—Claim No. 10440—O/c rate machinery | 5 00 |
| 58963—Claims. Nos. 10900 and 10521—O/c rate fire brick and clay, woodpulp | 61 39 |
| 59435—Water supplied | 35 10 |
| 58820—Claims Nos. 10749 and 11029—Rebate construction material and refund demurrage charges | 430 94 |
| 59496—Claims | 41 77 |
| 59787— " | 761 21 |
| 60439—Claims | 12 83 |
| 60842—Coal | 285 90 |
| 60924—Water | 90 |

ABITIBI POWER & PAPER CO., LIMITED, MONTREAL, P.Q.—*Continued.*

| | | | |
|---|---|---|---|
| 60851—Claims Nos. 10304, 10636, 10202—Overcharge weight woodpulp, fire brick and construction material | 244 51 | | |
| 60921— " 11009—Loss roll felt and overcharge in freight on shipment | 10 15 | | |
| 61157— " 10652, 10681—Damage newsprint papers, overcharge on woodpulp | 50 79 | | |
| 61449— " 11251—Overcharge shipment paper cores | 59 | | |
| 61611— " 11059—Overcharge rate newsprint | 6 50 | | |
| 62051A— " 9951—Rebate on car construction material | 52 93 | | |
| 61308— " 10147—Overcharge freight woodpulp | 33 53 | | |
| 61800— " 10721 and 12096—Overcharge weight newsprint paper | 32 89 | | |
| 62577— " 9556—Overcharge account weight pulpwood | 155 22 | | |
| 63179— " 11136 and 12008—Overcharge rate returned newsprint cores | 9 86 | | |
| 62878— " 9747, 9997 and 11995—Overcharge rate pulpwood and car hay | 408 70 | | |
| 63220— " 11637—Overcharge rate car newsprint paper | 4 17 | | |
| | | | $4,233 63 |

ALEXO NICKEL MINE, PORQUIS JUNCTION, ONT.

| | | | |
|---|---|---|---|
| 57337—Claim No. 9489—Loss account shortage nickel ore | 35 17 | | |
| 57976— " 10843—Demurrage on car ore | 1 00 | | |
| | | | 36 17 |

AMERICAN BRAKE SHOE AND FOUNDRY COMPANY, MAHWAH, N.J.

| | | | |
|---|---|---|---|
| 56548—Brake shoes | $563 39 | | |
| | | | $563 39 |

ALEXANDER & CABLE LITHOGRAPHING CO., LIMITED, TORONTO.

| | | | |
|---|---|---|---|
| 56650—Passes | $26 50 | | |
| 57126— " | 6 00 | | |
| 59848— " | 2 00 | | |
| 62790— " | 6 00 | | |
| | | | $40 50 |

ASSOCIATION OF AMERICAN RY. ACCOUNTING OFFICERS, WASHINGTON, D.C.

| | | | |
|---|---|---|---|
| 56710—Passenger synopsis | $1 50 | | |
| 59840—Annual dues | 7 00 | | |
| 50976— " | 7 00 | | |
| | | | $15 50 |

AMERICAN BANK NOTE COMPANY, OTTAWA, ONT.

| | | | |
|---|---|---|---|
| 56712—Engraving passes | $30 00 | | |
| | | | $30 00 |

AMERICAN RAILWAY ENGINEERING ASSOCIATION, CHICAGO, ILL.

| | | | |
|---|---|---|---|
| 56758—Subscription and dues | $10 50 | | |
| 57779—Vol. 7, Proceedings and Manual | 7 50 | | |
| 59990—Binding Manual | 50 | | |
| | | | $18 50 |

ALGOMA CENTRAL & HUDSON BAY RAILWAY, SAULT STE. MARIE, ONT.

| | | | |
|---|---|---|---|
| 56816—Car service balance | $243 45 | | |
| 58139— " " | 122 85 | | |
| 58040— " " | 171 45 | | |
| 59197— " " | 149 85 | | |
| 59516— " " | 199 80 | | |

ALGOMA CENTRAL & HUDSON BAY RAILWAY, ETC.—*Continued.*

| | | |
|---|---|---|
| 59889—Car service balance | $20 06 | |
| 60113— " " | 142 20 | |
| 60398— " " | 46 80 | |
| 61657— " " | 119 25 | |
| 62072— " " | 129 60 | |
| 62773— " " | 134 55 | |
| 63392— " " | 121 50 | |
| 63828—Car repairs | 86 71 | |
| | | $1,688 07 |

AMERICAN REFRIGERATOR TRANSIT COMPANY, ST. LOUIS, MO.

| | | |
|---|---|---|
| 56818—Car service balance | $1 54 | |
| 59518— " " | 4 51 | |
| 60115— " " | 3 79 | |
| 60400— " " | 1 69 | |
| 62775— " " | 1 69 | |
| | | $13 22 |

ATLANTIC COAST LINE RAILROAD, WILMINGTON, N.C.

| | | |
|---|---|---|
| 56820—Car service balance | $24 30 | |
| 58141— " " | 22 95 | |
| 58042— " " | 33 75 | |
| 59199— " " | 24 75 | |
| 59520— " " | 55 80 | |
| 60117— " " | 71 10 | |
| 60402— " " | 60 75 | |
| 61361—Car repairs | 37 47 | |
| 61659—Car service balance | 26 10 | |
| 62074— " " | 22 05 | |
| 62777— " " | 51 30 | |
| 63396— " " | 7 65 | |
| | | $437 97 |

ATLANTA, BIRMINGHAM & ATLANTIC RY. COMPANY, ATLANTA, GA.

| | | |
|---|---|---|
| 56822—Car service balance | $4 50 | |
| 58865— " repairs | 22 84 | |
| 60119— " service balance | 2 25 | |
| 61715— " " | 3 15 | |
| | | $32 74 |

ALGOMA EASTERN RAILWAY, SAULT STE. MARIE, ONT.

| | | |
|---|---|---|
| 56824—Car service balance | $26 10 | |
| 58046— " " | 30 60 | |
| 59201— " " | 9 00 | |
| 61663— " " | 3 60 | |
| 62076— " " | 10 35 | |
| 62779— " " | 18 45 | |
| 63400— " " | 11 45 | |
| 63826—Car repairs | 1 44 | |
| 58143—Car service balance | 12 15 | |
| | | $123 14 |

WM. AGAR, THORNLOE, ONT.

| | | |
|---|---|---|
| 57038*a*—Claim No. 10502—Loss account, bag staples | $0 70 | |
| | | $0 70 |

AMERICAN ARCH COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 57334—Fire brick | $29 45 | |
| 58282— " | 26 20 | |
| 58725— " | 16 30 | |
| 58964— " | 36 20 | |
| 60463—Arch brick | 36 40 | |
| 61001—Bricks | 65 60 | |
| | | $210 35 |

AURORA METAL COMPANY (INCORPORATED), AURORA, ILL.

| | | |
|---|---|---|
| 57336—Packing | $21 87 | |
| 58966— " | 29 97 | |
| 62794— " | 40 25 | |
| | | $92 09 |

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS, TORONTO, ONT.

| | | |
|---|---|---|
| 57525—Annual dues, year 1916, A. J. Parr | $5 00 | |
| 62269—Special assessment | 5 00 | |
| | | $10 00 |

ASSOCIATION OF TRANSPORTATION & CAR ACCOUNTING OFFICERS, CHICAGO, ILL.

| | | |
|---|---|---|
| 57527—Assessment No. 8 | $3 95 | |
| 58902—Volume No. 3, minutes, etc. | 4 35 | |
| 60348—Annual dues, W. J. Harper | 10 00 | |
| | | $18 30 |

THE ADAMS & WESTLAKE COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 57771—Sash lifts and holders, locks and hinges | $37 56 | |
| 58278—Keys and coach parts | 17 01 | |
| 58769—Coach fittings | 96 18 | |
| 58962—Weatherstrip | 27 50 | |
| 60465—Tail gates, switch locks, etc. | 82 74 | |
| 61612—Repair parts, lamp shades | 243 80 | |
| 62671—Locks, holders, etc. | 43 56 | |
| 62616—Steel coach keys | 7 20 | |
| | | $555 55 |

ANCHOR PACKING CO. OF CANADA, LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57775—Packing | $7 50 | |
| 58723— " | 12 66 | |
| 58968— " | 38 85 | |
| | | $59 01 |

ADVANCE PUMP & COMPRESSOR CO., BATTLE CREEK, MICH.

| | | |
|---|---|---|
| 57777—Repairs for pump | $30 57 | |
| 60469—Steam chest cover, spools, etc. | 63 00 | |
| | | $93 57 |

A. E. ADSHEAD, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 58011—Claim No. 10305—damage to waggon wheel | $5 80 | |
| | | $5 80 |

ALTON & SOUTHERN RAILROAD, EAST ST. LOUIS, ILL.

| | | |
|---|---|---|
| 58351—Car repairs | $7 79 | |
| | | $7 79 |

THE AMERICAN MUSEUM OF SAFETY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 57692—Annual dues, 1916 | $25 00 | |
| | | $25 00 |

THE FRED. ARMSTRONG CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57886—Repairing buzzers and desk buttons | $2 10 | |
| | | $2 10 |

M. A. Attallah, North Bay, Ont.

| | | |
|---|---|---|
| 57992—Claim No. 10787—Account value timber and charge for loading car | $25 00 | |
| | | $25 00 |

Aikenhead Hardware, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 58276—Drawer pulls | $3 33 | |
| 62486—Latches | 190 24 | |
| 62796—Hook sash, lifts, etc. | 19 88 | |
| 63262—Lock sets, R. H. door | 60 | |
| | | $214 05 |

Ahearn & Soper, Limited, Ottawa, Ont.

| | | |
|---|---|---|
| 58280—Battery jars | $28 80 | |
| | | $28 80 |

The Arcade Key Store, Toronto, Ont.

| | | |
|---|---|---|
| 58687—Key, locks, brass plate | $2 90 | |
| | | $2 90 |

James Andrews (M. M. Dept.), Englehart, Ont.

| | | |
|---|---|---|
| 58774—Expenses—Travelling | $1 80 | |
| 59841— " " | 45 | |
| | | $2 25 |

Percy Andrews, Cane, P.O.

| | | |
|---|---|---|
| 59754—Ties | $138 42 | |
| | | $138 42 |

Advertising & Publishing Agency, Toronto, Ont.

| | | |
|---|---|---|
| 59727—Advertisement—Directory—S. O. E. | $10 00 | |
| | | $10 00 |

Atlantic City Railroad Company, Philadelphia, Pa.

| | | |
|---|---|---|
| 60077—Car repairs | $0 74 | |
| | | $0 74 |

Alberta & Great Waterways Railway Company, Edmonton, Alta.

| | | |
|---|---|---|
| 60121—Car service balance | $16 20 | |
| 60406— " " | 13 05 | |
| 61665— " " | 3 60 | |
| | | $32 85 |

Lieut.-Col. Armstrong, 159th Battalion, C.E.F., Haileybury, Ont.

| | | |
|---|---|---|
| 60118—Commission on special train | $133 48 | |
| 60158—Donation towards deficit—excursion | 40 00 | |
| | | $173 48 |

Armstrong Bros. Tool Company, Chicago, Ill.

| | | |
|---|---|---|
| 60120—Steel | $22 57 | |
| | | $22 57 |

Estate of A. Avery, North Bay, Ont.

| | | |
|---|---|---|
| 60228—Birch | $299 62 | |
| 60230—Birch | 2 44 | |
| | | $302 06 |

ALBERTA BROOM & BRUSH SUPPLY COMPANY, ST. THOMAS, ONT.

| | | |
|---|---|---|
| 60294—Brooms | $42 50 | |
| 60866— " | 42 50 | |
| 61889— " | 52 50 | |
| | | $137 50 |

AMERICAN RAILWAY MASTER MECHANIC'S ASSOCIATION, CHICAGO, ILL.

| | | |
|---|---|---|
| 61097—Annual dues | $5 00 | |
| | | $5 00 |

AKRON, CANTON, YOUNGSTOWN RY. COMPANY, AKRON, OHIO.

| | | |
|---|---|---|
| 61263—Car repairs | $1 00 | |
| 62078—Car service balance | 90 | |
| | | $1 90 |

ALABAMA, TENNESSEE & NORTHERN RAILWAY, MOBILE, ALA.

| | | |
|---|---|---|
| 61661—Car service balance | $0 45 | |
| | | $0 45 |

AMERICAN STEEL FOUNDRIES, CHICAGO, ILL.

| | | |
|---|---|---|
| 61891—Wheels | $528 00 | |
| 63260—Wheels | 720 00 | |
| | | $1,248 00 |

ANNUAL REVIEW PUBLISHING COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 61154—Subscription—"Canadian Annual Review" | $10 00 | |
| | | $10 00 |

HUGH ALLAN, ENGINEERING DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 62179—Expenses—Travelling | $20 00 | |
| | | $20 00 |

AMERICAN FOREST PRODUCTS CORPORATION, CARTHAGE, N.Y.

| | | |
|---|---|---|
| 62311—Claim No. 12239—overcharge rate, pulpwood | $25 30 | |
| | | $25 30 |

CHAS. AUGI, COBALT, ONT.

| | | |
|---|---|---|
| 62579—Claim No. 12488—alleged loss, two bottles preserves | $2 95 | |
| | | $2 95 |

AIR BRAKE ASSOCIATION, NEW YORK, N.Y.

| | | |
|---|---|---|
| 62673—Proceedings | $2 00 | |
| | | $2 00 |

AMERICAN TANK LINE, CLEVELAND, O.

| | | |
|---|---|---|
| 62781—Car service balance | $1 90 | |
| 63402—Car service balance | 1 90 | |
| | | $3 80 |

ADVERTISER JOB PRINTING CO., LIMITED, LONDON, ONT.

| | | |
|---|---|---|
| 63109—Forms | $44 75 | |
| 62798—Receipts | 5 11 | |
| | | $49 86 |

ALLITH MANUFACTURING CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 62792—Hangers | $18 00 | |
| | | $18 00 |

AMERICAN NOVELTY COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 63368—Advertising *re* "sale of lands"—*Booster* | $12 75 | |
| | | $12 75 |

ARMOUR CAR LINE, CHICAGO, ILL.

| | | |
|---|---|---|
| 63394—Car service balance | $3 87 | |
| | | $3 87 |

JAMES ALLAN, BAGGAGEMAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 63800—Donation, account personal effects, alleged destroyed by fire | $10-00 | |
| | | $10 00 |

ALABAMA GREAT SOUTHERN RAILROAD COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 63824—Car repairs | $1 53 | |
| | | $1 53 |

THE BALTIMORE & OHIO RAILROAD COMPANY, BALTIMORE, MD.

| | | |
|---|---|---|
| 56617—Car repairs | $29 53 | |
| 56935— " " | 6 09 | |
| 56826— " service balance | 49 50 | |
| 57040—Claim No. 10444—Overcharge on brick | 32 16 | |
| 58145—Car service balance | 16 65 | |
| 58353— " repairs | 60 34 | |
| 58048— " service balance | 70 65 | |
| 59203— " " | 60 75 | |
| 59254— " repairs | 31 79 | |
| 59524— " service balance | 50 40 | |
| 60123— " " | 17 55 | |
| 59934— " repairs | 69 93 | |
| 60032— " " | 14 96 | |
| 60408— " service balance | 105 75 | |
| 61667— " " | 10 35 | |
| 61088— " repairs | 8 08 | |
| 62080— " service balance | 31 05 | |
| 62783— " " | 61 35 | |
| 63404— " " | 87 75 | |
| 63588— " repairs | 22 66 | |
| 63830— " " | 23 22 | |
| | | $860 51 |

M. BROWNSTEIN, COBALT, ONT.

| | | |
|---|---|---|
| 56647—Claim No. 10115—Overcharge on weight potatoes | $9 38 | |
| | | $9 38 |

BELL TELEPHONE COMPANY OF CANADA.

| | |
|---|---|
| 56681—Exchange and toll service | $30 60 |
| 56713—Toll service | 2 50 |
| 56833— " service | 5 40 |
| 56919—Telephone interchange balance | 150 51 |
| 57083—Toll service | 5 65 |
| 57085—Changing location of extension set | 1 14 |
| 56760—Exchange service | 9 25 |
| 57012— " and toll service | 14 80 |
| 57122— " service | 8 75 |
| 57128—Telephone interchange balance | 174 95 |

BELL TELEPHONE COMPANY OF CANADA.—*Continued.*

| | | |
|---|---|---|
| 57218—Exchange and toll service | 18 45 | |
| 57523— " and messenger service | 72 14 | |
| 57659— " and toll service | 49 00 | |
| 58093— " and toll service | 13 40 | |
| 58431—Telephone interchange balance | 163 06 | |
| 57826—Toll service | 12 00 | |
| 58512— " | 3 40 | |
| 58520—Telephone interchange balance | 174 07 | |
| 58485—Toll and messenger service | 3 85 | |
| 58591*a*—Toll service | 2 50 | |
| 58689—Exchange and toll service | 43 65 | |
| 58691—Toll service | 50 | |
| 59427—Telephone interchange balance | 170 16 | |
| 59437—Exchange and toll service | 21 85 | |
| 58642— " " " | 81 49 | |
| 58924—Toll service | 23 40 | |
| 59452— " and interchange | 148 03 | |
| 59780— " and exchange | 13 50 | |
| 60057— " | 45 | |
| 60079—Telephone interchange balance | 170 82 | |
| 60405—Toll service | 3 25 | |
| 60733— " | 7 90 | |
| 60354—Exchange and toll service | 41 00 | |
| 60464— " " | 10 25 | |
| 60640—Telephone interchange balance | 116 40 | |
| 60978—Exchange service | 44 09 | |
| 60835— " " | 47 62 | |
| 60887— " " | 5 00 | |
| 61099— " and toll service | 35 95 | |
| 61101— " " | 11 00 | |
| 61441—Toll service | 8 15 | |
| 61947—Telephone interchange balance | 139 81 | |
| 62003—Toll service | 1 25 | |
| 62085— " | 5 30 | |
| 61334— " | 12 10 | |
| 62240—Telephone interchange balance and toll service | 149 97 | |
| 62244—Toll service | 5 25 | |
| 63143—Telephone interchange balance | 43 10 | |
| 62490—Toll service | 14 60 | |
| 62492— " and exchange service | 41 02 | |
| 62696—Exchange service | 102 29 | |
| 62700— " and toll service | 27 00 | |
| 62750— " " | 8 35 | |
| 63036— " " | 52 22 | |
| 63154—Telephone interchange balance | 99 27 | |
| 63646—Toll service | 8 40 | |
| | | $2,629 81 |

BEARDMORE BELTING COMPANY, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56697—Belting | $37 04 | |
| 56982— " | 71 50 | |
| 57348— " | 15 00 | |
| 57587— " | 47 63 | |
| 58292—Star Oak laces | 5 25 | |
| 58729— " " | 10 50 | |
| 58698—Belting | 43 75 | |
| 60676—Laces | 5 75 | |
| 61109— " | 4 60 | |
| 62675—Belting | 11 67 | |
| | | $252 69 |

R. G. Boast, Engineering Staff, North Bay, Ont.

| | | |
|---|---|---|
| 56715—Travelling expenses | $9 50 | |
| 57565— " " | 6 50 | |
| 57696— " " | 6 55 | |
| 58629— " " | 2 75 | |
| 59324— " " | 4 00 | |
| 59729— " " | 8 00 | |
| 61403— " " | 10 00 | |
| 61228— " " | 6 60 | |
| 62199— " " | 6 35 | |
| 62454— " " | 10 60 | |
| | | $70 85 |

The Bank of Ottawa.

| | | |
|---|---|---|
| 56767—Unpaid draft | $4 40 | |
| 57087— " | 4,222 58 | |
| 57222— " | 3 15 | |
| 57228— " | 90 | |
| 57579— " | 3 15 | |
| 57631— " | 45 | |
| 57704—Exchange charges, etc. | 319 12 | |
| 57960—Porcupine Branch, Voucher No. 723, favor A. M. Swenson, account balance special Porcupine Bank account transferred to Bank of Ottawa account | 28 15 | |
| 58797—Unpaid draft | 2 25 | |
| 58734—Advance to cover exchange charges, etc. | 50 00 | |
| 58960—Unpaid draft | 95 | |
| 59711— " " | 85 | |
| 59860—Exchange charges, etc. | 32 06 | |
| 60350— " " | 38 24 | |
| 60791—Unpaid draft | 11,085 38 | |
| 60819— " " | 3 50 | |
| 61047— " " | 13 50 | |
| 61045—Exchange charges, etc. | 27 94 | |
| 62049—Unpaid draft | 25 | |
| 61206—Adjustment of erroneous deposit | 3 27 | |
| 61212—Exchange charges, etc. | 23 03 | |
| 61390—Unpaid draft | 21 79 | |
| 62271 " " | 5 79 | |
| 62387—Exchange charges, etc. | 7 93 | |
| 62586—Unpaid draft | 8 80 | |
| 62690—Exchange charges, etc. | 6 43 | |
| | | $15,913 86 |

Bureau of Explosives, New York, N.Y.

| | | |
|---|---|---|
| 56765—Assessment covering membership | $100 47 | |
| 56762—Bulletins | 4 50 | |
| 57130— " | 4 50 | |
| 58588— " | 4 50 | |
| 59731—Assessment No. 19 | 91 33 | |
| 59995—Bulletin No. 31 | 4 50 | |
| 61399— " | 4 50 | |
| 63802—Assessment No. 20 | 57 20 | |
| 62494—Copies Accident Bulletin No. 33 | 4 50 | |
| | | $276 00 |

L. Brewster, Porter, Private Car, Toronto, Ont.

| | |
|---|---|
| 56769—Supplies for private car | $0 80 |
| 59450— " " | 3 10 |
| 60207— " " | 1 20 |
| 60759— " " | 4 25 |
| 59994— " " | 4 30 |

L. Brewster, Porter, Private Car, Toronto, Ont.—*Continued.*

| | | | |
|---|---|---|---|
| 60979—Supplies for private car | | $4 25 | |
| 61272— " " | | 5 32 | |
| 62275— " " | | 4 35 | |
| 62972— " " | | 2 00 | |
| | | | $29 57 |

E. C. Banks, Claims Investigator, North Bay, Ont.

| | | | |
|---|---|---|---|
| 56771—Travelling expenses | | $14 25 | |
| 56618— " | | 20 00 | |
| 57617— " | | 36 25 | |
| 57686— " | | 36 05 | |
| 58587— " | | 22 25 | |
| | | | $128 80 |

The Belt Railway Company of Chicago, Chicago, Ill.

| | | | |
|---|---|---|---|
| 56793—Car repairs | | $1 19 | |
| 56941— " | | 4 34 | |
| 59771— " | | 2 51 | |
| | | | $8 04 |

Buntin, Gillies & Co., Limited, Hamilton, Ont.

| | | | |
|---|---|---|---|
| 56827—Stationery | | $102 80 | |
| 56612—Paper, pencils and pens | | 30 15 | |
| 57489—Stationery | | 153 09 | |
| 57648—Stationery and paper | | 62 59 | |
| 57806—File folders, forms and paper | | 41 75 | |
| 57926—Stationery | | 113 96 | |
| 58533—Paper fasteners and file covers | | 2 19 | |
| 58745—Stationery | | 92 77 | |
| 58696—Fasteners, pencils, etc. | | 53 56 | |
| 59004—Stationery | | 196 67 | |
| 59961— " | | 49 10 | |
| 60108— " | | 60 61 | |
| 60638—Erasers, folders, etc. | | 26 39 | |
| 61003—Stationery | | 88 40 | |
| 61565—Time books | | 1 20 | |
| 61466—Stationery | | 25 36 | |
| 61566—Stationery | | 240 38 | |
| 62345—File backs | | 13 72 | |
| 62618—White backing, etc. | | 188 95 | |
| 62752—Wire desk baskets | | 5 39 | |
| 62762—Ribbons, clips, etc. | | 58 74 | |
| | | | $1,607 77 |

Chas. Battley, Air Brake Inspector, North Bay, Ont.

| | | | |
|---|---|---|---|
| 56859—Travelling expenses | | $3 10 | |
| 56736— " | | 1 80 | |
| 57567— " | | 7 85 | |
| 57706— " | | 7 70 | |
| 58631— " | | 3 20 | |
| 58771— " | | 69 45 | |
| 58848— " | | 4 15 | |
| 59322— " | | 7 60 | |
| 59697— " | | 4 90 | |
| 60176— " | | 5 35 | |
| 61401— " | | 5 10 | |
| 61224— " | | 1 25 | |
| 62257— " | | 6 25 | |
| | | | $127 70 |

J. Beath, Car Foreman, North Bay, Ont.

| | | |
|---|---|---|
| 56861—Travelling expenses | $1 60 | |
| 57726— " | 13 15 | |
| 58633— " | 17 50 | |
| 59695— " | 9 15 | |
| 60174— " | 2 85 | |
| 63208— " | 55 | |
| | | $44 80 |

J. Brice, M. M. Dept., North Bay, Ont.

| | | |
|---|---|---|
| 56863—Travelling expenses | $1 55 | |
| 57057—Travelling expenses | 1 40 | |
| | | $2 95 |

Buffalo, Rochester & Pittsburg Railway Co., Rochester, N.Y.

| | | |
|---|---|---|
| 56937—Car repairs | $4 21 | |
| 57274—Car repairs | 4 33 | |
| 58015—Claim No. 9910—Overcharge weight pulpwood | 18 35 | |
| 58147—Car service balance | 4 05 | |
| 59205—Car service balance | 31 05 | |
| 59228—Car repairs | 13 35 | |
| 59526—Car service balance | 256 05 | |
| 60125—Car service balance | 197 10 | |
| 59938—Car repairs | 4 10 | |
| 60352—Car repairs | 16 06 | |
| 60410—Car service balance | 214 10 | |
| 61669—Car service balance | 22 95 | |
| 61958—Car repairs | 5 42 | |
| 62451—Car repairs | 2 41 | |
| 63406—Car service balance | 5 85 | |
| 63834—Car repairs | 21 97 | |
| | | $821 35 |

Boston and Maine Railroad Company, Boston, Mass.

| | | |
|---|---|---|
| 56939—Car repairs | $2 33 | |
| 56940—Ticket balance | 5 49 | |
| 57272—Car repairs | 56 | |
| 58155—Car service balance | 28 35 | |
| 58307—Ticket balance | 24 60 | |
| 58355—Car repairs | 2 16 | |
| 58052—Car service balance | 46 80 | |
| 59209—Car service balance | 22 50 | |
| 59397—Ticket balance | 51 16 | |
| 59226—Car repairs | 3 10 | |
| 59530—Car service balance | 73 35 | |
| 59728—Ticket balance | 27 56 | |
| 60021—Car repairs | 8 88 | |
| 60129—Car service balance | 33 75 | |
| 60407—Prop'n expenses, immigrant business | 45 | |
| 60034—Car repairs | 97 | |
| 60414—Car service balance | 10 80 | |
| 61365—Car repairs | 24 84 | |
| 61673—Car service balance | 36 90 | |
| 62084—Car service balance | 46 35 | |
| 62449—Car repairs | 13 14 | |
| 62787—Car service balance | 54 00 | |
| 62789—Car service balance | 1 80 | |
| 62945—Passenger car mileage | 40 48 | |
| 62949—Ticket balance | 2 31 | |
| 62951—Ticket balance | 11 98 | |
| 63225—Interline freight balance | 40 | |
| 63410—Car service | 1 80 | |
| 63566—Ticket balance | 6 12 | |
| 63832—Car repairs | 7 03 | |
| | | $589 96 |

BOSTON & ALBANY RAILROAD COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56993—Car repairs | $4 36 | |
| 58518— " | 57 | |
| 59224— " | 48 | |
| 59891— " | 1 00 | |
| 60019— " | 61 | |
| 61363— " | 1 59 | |
| 63736— " | 3 06 | |
| | | $11 67 |

C. O. BAKER, AGENT, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57053—Travelling expenses | $11 25 | |
| 61332—Travelling expenses | 26 95 | |
| | | $38 20 |

ROY BEATTY (M. M. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 57055—Travelling expenses | $2 05 | |
| 57613— " " | 1 25 | |
| | | $3 30 |

WM. BERTRAND, NUSHKA, ONT.

| | | |
|---|---|---|
| 57081—Claim No. 10473—Storage on box butter | $22 33 | |
| | | $22 33 |

BEGG BROS., NORTH BAY, ONT.

| | | |
|---|---|---|
| 57139—Cotton, cheesecloth, etc. | $19 68 | |
| 57354—Cotton | 9 24 | |
| 57791—Roller towels | 4 20 | |
| 58286—Cotton and cheesecloth | 14 70 | |
| 58731—Drygoods | 55 08 | |
| 58970—Oilcloth, cotton, etc. | 48 10 | |
| 60461—Towelling, cotton, etc. | 57 20 | |
| 60678—Towelling, oilcloth, etc. | 15 45 | |
| 60870— " " | 19 95 | |
| 61893—Cotton, cheesecloth | 22 15 | |
| 61568—Towels, cheesecloth | 12 54 | |
| 62677—Oilcloth, towelling, etc. | 40 15 | |
| 62802—Towelling | 1 80 | |
| 63040—Grey cotton, cheesecloth | 17 43 | |
| | | $337 67 |

BUSINESS SYSTEMS, LIMITED, TORONTO.

| | | |
|---|---|---|
| 57143—Binders and forms | $19 70 | |
| 57340—Telegram forms | 10 00 | |
| 57693—Forms | 27 10 | |
| 57781— " | 10 00 | |
| 58100— " | 137 05 | |
| 58743— " | 52 00 | |
| 58974— " | 28 20 | |
| 59006—Stationery | 129 99 | |
| 60686—Forms, lettergrams, etc. | 218 13 | |
| 61105—Telegraph forms | 13 50 | |
| 61468—Forms | 28 34 | |
| 61560— " | 61 31 | |
| 62681— " | 26 62 | |
| | | $761 94 |

BARBER ELLIS, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57145—Envelopes | $43 07 | |
| 57344— " | 2 50 | |
| 57789—Way bill pockets | 12 45 | |

BARBER ELLIS, LIMITED, TORONTO, ONT.—*Continued.*

| | | |
|---|---|---|
| 58288—Envelopes, etc. | 43 91 | |
| 58727— " | 22 97 | |
| 60477—Forms | 69 52 | |
| 60300— " | 16 76 | |
| 60674—Forms, way bill pockets | 60 65 | |
| 61517—Envelopes | 16 95 | |
| 61556—Way bill pockets | 39 84 | |
| | | $328 62 |

THE BOECKH BROS. COMPANY, LIMITED, TORONTO.

| | | |
|---|---|---|
| 57147—Switch brooms | $21 00 | |
| 57785—Brushes | 21 00 | |
| 58290—Wire switch brooms | 21 00 | |
| | | $63 00 |

BENJAMIN ELECTRIC MANUFACTURING CO. OF CANADA, LIMITED, TORONTO.

| | | |
|---|---|---|
| 57233—Street hoods | $7 87 | |
| 57356—Lamp sockets | 3 60 | |
| | | $11 47 |

BEAVERHOUSE MINING SYNDICATE, HORONIA MINES, ONT.

| | | |
|---|---|---|
| 57339—Claim No. 9996—Loss account, shortage engine parts | 130 00 | |
| | | $130 00 |

BUFFALO & SUSQUEHANNA COAL & COKE CO., BUFFALO, N.Y.

| | | |
|---|---|---|
| 57407—Coal | $2,655 52 | |
| 57409— " | 2,336 19 | |
| 57560— " | 1,995 09 | |
| 57558— " | 2,483 70 | |
| 58337— " | 2,547 85 | |
| 58339— " | 2,508 68 | |
| 58516— " | 2,566 55 | |
| 58614— " | 2,246 64 | |
| 58616— " | 2,147 13 | |
| 58907— " | 2,229 01 | |
| 58909— " | 2,793 52 | |
| 59089— " | 3,057 40 | |
| 58934— " | 2,838 53 | |
| 58936— " | 2,118 81 | |
| 59372— " | 2,039 02 | |
| 59374— " | 2,144 81 | |
| 59376— " | 2,093 76 | |
| 59428— " | 2,550 30 | |
| 59430— " | 2,537 92 | |
| 59432— " | 3,397 22 | |
| 60205— " | 2,913 70 | |
| 60695— " | 2,793 66 | |
| 60751— " | 2,999 48 | |
| 61014— " | 2,005 74 | |
| 61016— " | 3,270 80 | |
| 61018— " | 2,080 98 | |
| 61020— " | 3,011 73 | |
| 61407— " | 2,640 90 | |
| 61447— " | 2,729 23 | |
| 61380— " | 2,605 71 | |
| 61382— " | 2,618 49 | |
| 62613— " | 3,692 62 | |
| 62717— " | 3,771 75 | |
| 62719— " | 3,744 46 | |
| 62970— " | 3,046 51 | |
| 63038— " | 3,169 49 | |
| 63094— " | 1,782 22 | |
| | | $98,165 12 |

H. Brockway (Audit Dept.), North Bay, Ont.

| | | |
|---|---|---|
| 56522—Travelling expenses | $6 25 | |
| | | $6 25 |

Beardmore & Company, Toronto.

| | | |
|---|---|---|
| 56578—Leather | $8 98 | |
| 56984— " | 7 11 | |
| 57585— " | 7 68 | |
| 58549— " | 8 36 | |
| 61562— " | 8 90 | |
| | | $41 03 |

Bessemer & Lake Erie Railroad Company, Pittsburg, Pa.

| | | |
|---|---|---|
| 56828—Car service balance | $4 95 | |
| 58149— " " | 22 05 | |
| 58050— " " | 29 25 | |
| 59207— " " | 92 70 | |
| 59528— " " | 221 40 | |
| 60127— " " | 512 90 | |
| 59936—Car repairs | 5 40 | |
| 60412—Car service balance | 88 20 | |
| 61671— " " | 28 80 | |
| 62082— " " | 16 20 | |
| 62785— " " | 16 20 | |
| 63408— " " | 36 45 | |
| | | $1,074 50 |

Buffalo & Susquehanna Railway, Buffalo, N.Y.

| | | |
|---|---|---|
| 56830—Car service balance | $58 05 | |
| 57270—Car repairs | 1 26 | |
| 58151—Car service balance | 39 60 | |
| | | $98 91 |

Buffalo & Susquehanna Railroad Corporation, Buffalo, N.Y.

| | | |
|---|---|---|
| 56832—Car service balance | $617 40 | |
| 57268—Car repairs | 7 10 | |
| 58153—Car service balance | 99 90 | |
| 58357—Car repairs | 5 65 | |
| 58054—Car service balance | 240 75 | |
| 59211— " " | 237 60 | |
| 59483—Car repairs | 4 64 | |
| 59252— " | 2 70 | |
| 59534—Car service balance | 400 95 | |
| 60131— " " | 949 50 | |
| 60416— " " | 527 40 | |
| 61675— " " | 1,090 35 | |
| 61956—Car repairs | 3 81 | |
| 62088—Car service balance | 776 25 | |
| 62447—Car repairs | 20 | |
| 62793—Car service balance | 633 60 | |
| 63522— " " | 1,219 50 | |
| | | $6,817 30 |

Berwind-White Coal Mining Company, Philadelphia, Pa.

| | | |
|---|---|---|
| 56834—Car service balance | $3 79 | |
| 60133— " " | 3 79 | |
| | | $7 58 |

Buffalo Mines, Limited, Cobalt, Ont.

| | | |
|---|---|---|
| 57042—Claim No. 10542—Damage to crucible | $2 00 | |
| 59500— " No. 10280—Loss account, damage to lime by rain | 39 05 | |

BUFFALO MINES, LIMITED, COBALT, ONT.—*Continued.*

| | | |
|---|---|---|
| 61804—Claims Nos. 11849 and 11003—Loss, barrel creosote; overcharge freight silver ore | 290 85 | |
| | | $331 90 |

BURROW, STEWART & MILNE CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 57342—Scale cards | $9 63 | |
| 58284—Scale cards and lever | 13 33 | |
| 58741—Platform scales | 9 00 | |
| 60473—Fireback, grate, ends | 4 08 | |
| 60684—Scale cards | 9 63 | |
| 61107— " | 8 75 | |
| 62679—Trucks, scales, lever, etc. | 47 11 | |
| 62810—Cards | 8 75 | |
| | | $110 28 |

R. BUNYAN & COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57346—Corn and shorts | $19 20 | |
| 57793—Hay | 194 40 | |
| 58739— " | 40 22 | |
| 58822—Claim No. 10865—Overcharge weight hay | 3 43 | |
| 59384— " No. 10871—Loss bag moulee destroyed by fire | 1 75 | |
| 60298—Grass seed | 1 50 | |
| 60868—Oats | 2 40 | |
| | | $262 90 |

JOHN BOURKE & COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57350—Coal tar | $12 00 | |
| 60680—Paristone, Plaster of Paris | 39 45 | |
| 61570— " " " | 38 90 | |
| 62683— " lime, etc. | 222 20 | |
| 62800— " etc. | 235 68 | |
| | | $548 23 |

BEAMISH & SMITH, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57352—Braid | $1 25 | |
| 61572—Awning duck | 9 15 | |
| | | $10 40 |

M. BOIVIN, TIMMINS, ONT.

| | | |
|---|---|---|
| 57551—Ties | $2,234 58 | |
| 60064— " | 48 72 | |
| 61500— " | 859 86 | |
| 62806— " | 383 68 | |
| | | $3,526 84 |

W. BRIMLEY (M. M. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 57569—Expenses, travelling | $0 75 | |
| | | $0 75 |

W. J. BAULDRY, COLONIZATION AGENT, COCHRANE, ONT.

| | | |
|---|---|---|
| 57615—Travelling expenses | $9 55 | |
| 57730— " " | 7 70 | |
| 58613— " " | 5 35 | |
| 58776— " " | 10 30 | |
| 59763— " " | 10 75 | |
| 60172— " " | 16 25 | |
| 61405— " " | 9 75 | |
| 61226— " " | 9 45 | |
| 62503— " " | 11 60 | |
| 62468— " " | 10 65 | |
| | | $101 35 |

BANNER & OSTROM, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57741—Commissary for *"Abitibi"* | $12 38 | |
| 61302—Groceries for private car | 15 19 | |
| 62246— " " | 65 24 | |
| 62685— " " | 39 85 | |
| 62698— " " | 12 24 | |
| | | $144 90 |

THE D. W. BOSLEY COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 57783—Weather strip | $24 00 | |
| 60471— " | 29 00 | |
| 60682— " | 29 00 | |
| | | $82 00 |

BERLIN FELT BOOT CO., LIMITED, KITCHENER, ONT.

| | | |
|---|---|---|
| 57787—Saddle felt | $12 50 | |
| 58735— " | 22 50 | |
| | | $35 00 |

L. W. BROWN, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 58013—Claim No. 10630—Shortage raisins | $0 52 | |
| 62030— " No. 12248—Damage and loss, jar olives | 1 15 | |
| .. | | $1 67 |

DR. G. T. BAILEY, COCHRANE, ONT.

| | | |
|---|---|---|
| 58091—Expenses, professional service | $2 00 | |
| | | $2 00 |

BANGOR & AROOSTOOK RAILROAD, BANGOR, ME.

| | | |
|---|---|---|
| 58157—Car service balance | $6 30 | |
| 59532— " " | 12 60 | |
| 62086— " " | 5 85 | |
| 62791— " " | 90 | |
| 63412— " " | 3 15 | |
| | | $28 80 |

BALTIMORE & OHIO-CHICAGO TERMINAL R. R. COMPANY.

| | | |
|---|---|---|
| 58359—Car repairs | $1 40 | |
| 63734— " | 2 16 | |
| | | $3 56 |

PETER BENEKE, McCOOL P.O., ONT.

| | | |
|---|---|---|
| 58463—Ties | $107 79 | |
| | | $107 79 |

FRANCIS BURNS, PORQUIS P.O., ONT.

| | | |
|---|---|---|
| 58463—Ties | $37 01 | |
| 58593— " | 21 40 | |
| 59425— " | 72 12 | |
| | | $130 53 |

P. BERNARD ICE COMPANY, COCHRANE, ONT.

| | | |
|---|---|---|
| 57618—Ice | $265 60 | |
| | | $265 60 |

J. J. Belland, Nellie Lake P.O., Ont.

| | | |
|---|---|---|
| 57672—.83 acres of land, Township of Newmarket ..... | $40 00 | $40 00 |

W. Brosseau, North Bay, Ont.

| | | |
|---|---|---|
| 57784—Award, W. C. B., *re* alleged injuries ..... | $13 71 | $13 71 |

Burroughs Adding Machine Company, Detroit, Mich.

| | | |
|---|---|---|
| 57830—Attention to adding machine ..... | $4 00 | |
| 61519— " " " ..... | 4 00 | |
| 62687—Stand . . ..... | 10 00 | |
| | | $18 00 |

Dr. J. A. R. Biron, Cochrane, Ont.

| | | |
|---|---|---|
| 57858—Professional service rendered ..... | $5 00 | $5 00 |

A. W. Brown (Relieving Agent), Cochrane, Ont.

| | | |
|---|---|---|
| 57924—Expenses, travelling ..... | $14 00 | |
| 58773— " " ..... | 14 00 | |
| 58905— " " ..... | 14 00 | |
| | | $42 00 |

Ernest Berard, Heaslip, Ont.

| | | |
|---|---|---|
| 57962—Award, W. C. B., in full, *re* alleged injuries received.... | $7 84 | $7 84 |

S. M. Brasher, Relieving Agent, North Bay, Ont.

| | | |
|---|---|---|
| 57966—Expenses, travelling ..... | $14 00 | $14 00 |

Chas. Bernstein, Cochrane, Ont.

| | | |
|---|---|---|
| 57978—Claim No. 10367—Loss account, damage to fruit and vegetables . . ..... | $52 44 | |
| 58965—Claim No. 10647—Loss account, shortage bag onions.... | 2 16 | |
| 59498— " No. 10887—Overcharge in weight, fruit and vegetables . . ..... | 17 63 | |
| | | $72 23 |

J. L. Bucher, New Liskeard, Ont.

| | | |
|---|---|---|
| 57980—Claim No. 10708—Loss account, damage to whiskey..... | $8 82 | |
| 62581— " No. 12494—Loss account, gin ..... | 1 75 | |
| | | $10 57 |

Beir, Soudheimer & Company, New York, N.Y.

| | | |
|---|---|---|
| 57982—Claim No. 10244—Overcharge rate on zinc dust ..... | $2 59 | $2 59 |

Blue Ridge Railway Company, Washington, D.C.

| | | |
|---|---|---|
| 58056—Car service balance ..... | $3 15 | $3 15 |

BUMSTEAD BROS., KENABEEK, ONT.

| | | |
|---|---|---|
| 58593—Ties | $87 70 | |
| 58593— " | 91 61 | |
| 59425— " | 50 00 | |
| 59425— " | 52 00 | |
| | | $281 31 |

J. H. BUNNELL & COMPANY (INC.), NEW YORK, N.Y.

| | | |
|---|---|---|
| 58733—Relays, keys, sounders | $16 59 | |
| 60475—Telegraph keys, springs | 38 00 | |
| | | $54 59 |

BROWN BROTHERS, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58737—Paper, refills, booklets, etc. | $8 69 | |
| | | $8 69 |

CLINTON BRADBURY, BRADWELL, SASK.

| | | |
|---|---|---|
| 59123—Claim No. 11142—Loss, baggage destroyed by fire | $77 30 | |
| | | $77 30 |

MRS. ALEX. BROTHERSTON, WINNIPEG, MAN.

| | | |
|---|---|---|
| 59125—Claim No. 11141—Baggage destroyed by fire | 100 00 | |
| | | $100 00 |

D. F. BRILL, ST. PAUL, MINN.

| | | |
|---|---|---|
| 59145—Copy "Pacific Northwest Joint Passenger Tariff" | $0 50 | |
| | | $0 50 |

E. P. BATTLEY, SARNIA, ONT.

| | | |
|---|---|---|
| 58972—Stop watch | $25 00 | |
| | | $25 00 |

T. J. BAKER, REDWATER, ONT.

| | | |
|---|---|---|
| 59448—Board supplied engineering staff | $5 00 | |
| 60070— " " " " | 23 25 | |
| 60636— " " " " | 22 50 | |
| 62001— " " " " | 23 25 | |
| 62242— " " " " | 12 50 | |
| | | $86 50 |

BAY TERMINAL RAILROAD COMPANY, TOLEDO, O.

| | | |
|---|---|---|
| 59536—Car service balance | $0 80 | |
| 60135— " " | 80 | |
| | | $1 60 |

A. C. BAIN (M. M. DEPT.), ENGLEHART, ONT.

| | | |
|---|---|---|
| 59693—Expenses, travelling | $1 75 | |
| | | $1 75 |

E. H. BASTIAN, SHILLINGTON, ONT.

| | | |
|---|---|---|
| 59789—Claim No. 11048—overcharge in rate sleigh | $8 33 | |
| | | $8 33 |

T. BINGHAM (B. & B. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 59843—Expenses, travelling | $4 35 | |
| | | $4 35 |

MRS. HERBERT BISSELL, GILPIN, ALTA.

| | | |
|---|---|---|
| 59869—Claim No. 11468—Loss account, baggage burned..... | $100 00 | $100 00 |

W. N. BOTSFORD, WINNIPEG, MAN.

| | | |
|---|---|---|
| 59871—Claim No. 11491—Loss account, baggage burned ..... | $100 00 | $100 00 |

S. J. BIRD, MATHESON, ONT.

| | | |
|---|---|---|
| 60064—Ties . . . . . | $43 56 | $43 56 |

FRANCIS BROWN, EARLTON P.O., ONT.

| | | |
|---|---|---|
| 60064—Ties . . . . . | $64 05 | $64 05 |

HERMAN BERGER, PORQUIS P.O., ONT.

| | | |
|---|---|---|
| 60064—Ties . . . . . | $62 94 | $62 94 |

D. A. BALFOUR COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 60166—Carbon . . . . . | $2 00 | |
| 61056— " . . . . . | 12 00 | |
| 62351— " . . . . . | 2 00 | |
| | | $16 00 |

T. BEWLEY, TORONTO, ONT.

| | | |
|---|---|---|
| 60232—Cartage . . . . . | $2 65 | |
| 62808— " . . . . . | 2 70 | |
| | | $5 35 |

BRITISH AMERICAN OIL COMPANY, LIMITED, TIMMINS, ONT.

| | | |
|---|---|---|
| 60855—Claim No. 10796—Loss account, shortage oil ..... | $5 00 | $5 00 |

JOHN BROWN, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 61049—Final award, W. C. B., *re* alleged injuries ..... | $18 99 | $18 99 |

J. C. BOGART, THORNLOE, ONT.

| | | |
|---|---|---|
| 61063—Ties . . . . . | $158 10 | |
| 61063— " . . . . . | 47 79 | |
| 61103—Timber . . . . . | 242 82 | |
| 62347—Lumber . . . . . | 122 50 | |
| | | $571 21 |

BRANTFORD ROOFING CO., LIMITED, BRANTFORD, ONT.

| | | |
|---|---|---|
| 61111—Asphalt . . . . . | $157 20 | |
| 61558— " . . . . . | 192 40 | |
| | | $349 60 |

THOMAS BEVERLEY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61445—Award, W. C. B., *re* alleged injuries ..... | $5 55 | $5 55 |

BRITISH & COLONIAL PRESS, TORONTO, ONT.

| | | |
|---|---|---|
| 61607—Views on fires, Northern Ontario | $10 00 | |
| | | $10 00 |

J. H. BOWMAN (SPECIAL OFFICER), COBALT, ONT.

| | | |
|---|---|---|
| 61230—Travelling expenses | $3 50 | |
| 62488—Amount paid for battery | 40 | |
| | | $3 90 |

JOHN L. BUEHIR, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 61436—Claim No. 11465—Alleged loss, bottle liquor | $0 63 | |
| | | $0 63 |

J. R. BOOTH, OTTAWA, ONT.

| | | |
|---|---|---|
| 61500—Ties | $39 15 | |
| 61500— " | 4 59 | |
| 63222—Claim No. 12838—Loss oil account, leakage | 2 76 | |
| | | $46 50 |

BIRD & SON, HAMILTON, ONT.

| | | |
|---|---|---|
| 61564—Waterproof paper | $22 64 | |
| 62349—Building paper | 25 20 | |
| | | $47 84 |

P. D. BOYER, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 61802—Claim No. 12151—Alleged damage to syrup | $1 01 | |
| | | $1 01 |

C. BERARD, HEASLIP, ONT.

| | | |
|---|---|---|
| 62238—Meals supplied section foreman | $1 75 | |
| | | $1 75 |

M. BOURGARE, LATCHFORD, ONT.

| | | |
|---|---|---|
| 62143—Award, W. C. B., *re* alleged injuries received | $18 03 | |
| | | $18 03 |

A. BRAZEAU, TIMMINS, ONT.

| | | |
|---|---|---|
| 62167—Refund deposit on contract, Timmins Station | $119 50 | |
| | | $119 50 |

EDWARD BROWN, NORTH COBALT P.O., ONT.

| | | |
|---|---|---|
| 62669—Ties | $41 19 | |
| | | $41 19 |

NORMAN BUSS, HOMER P.O., ONT.

| | | |
|---|---|---|
| 62669—Ties | $17 28 | |
| | | $17 28 |

HAROLD BENCH, KENABEEK P.O., ONT.

| | | |
|---|---|---|
| 62669—Ties | $50 49 | |
| | | $50 49 |

BROTHERHOOD OF LOCOMOTIVE ENGINEERS, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62575—Expenses *re* Conference | $10 40 | |
| | | $10 40 |

L. Boivin, Cochrane, Ont.

| | | |
|---|---|---|
| 62739—Claim No. 12484—Alleged loss, bag rice | $2 47 | $2 47 |

R. H. Brown Company, Latchford, Ont.

| | | |
|---|---|---|
| 62741—Claim No. 11846—Alleged damage to meat | $1 14 | $1 14 |

British Hotel, Charlton, Ont.

| | | |
|---|---|---|
| 62743—Claim No. 12322—Alleged loss liquor | $9 48 | $9 48 |

British Red Cross Society, Toronto, Ont.

| | | |
|---|---|---|
| 62448—Donation | $5,000 00 | $5,000 00 |

Buffalo Brake Beam Company, New York, N.Y.

| | | |
|---|---|---|
| 62620—Fulcrums | $35 00 | $35 00 |

Bouvier & Hutchinson, Toronto, Ont.

| | | |
|---|---|---|
| 62702—Linen envelopes | $29 69 | |
| 62804— " " | 20 39 | |
| | | $50 08 |

F. N. Burt Co., Limited, Toronto, Ont.

| | | |
|---|---|---|
| 62812—Books | $55 99 | $55 99 |

H. Buckler, Cobalt, Ont.

| | | |
|---|---|---|
| 62880—Claim No. 12646—Alleged loss caddy tobacco | $18 48 | $18 48 |

Charles Baker, Heaslip, Ont.

| | | |
|---|---|---|
| 63370—Ties | $10 42 | $10 42 |

Borden Milk Company, Limited, Montreal, Que.

| | | |
|---|---|---|
| 63718—Claim No. 12816—Ten cases milk alleged destroyed by fire | $35 88 | $35 88 |

A. A. Cole, Mining Engineer, Cobalt, Ont.

| | |
|---|---|
| 56467—Salary, November, 1915 | $285 00 |
| 56717—Expenses | 17 79 |
| 56610— " | 20 65 |
| 56502—Salary, December, 1915 | 285 00 |
| 57451—Salary, January, 1916 | 285 00 |
| 57555—Expenses | 11 20 |
| 57580—Salary, February, 1916 | 285 00 |
| 57788—Expenses | 9 08 |
| 58471—Salary, March, 1916 | 285 00 |
| 58675—Expenses | 5 35 |
| 58628—Salary, April, 1916 | 285 00 |
| 58756—Expenses | 9 02 |
| 59617—Salary, May, 1916 | 285 00 |
| 59765—Expenses | 2 81 |
| 59784—Salary, June, 1916 | 285 00 |

A. A. Cole, Mining Engineer, Cobalt, Ont.—*Continued.*

| | | |
|---|---|---|
| 60180—Expenses | 2 27 | |
| 60801—Salary, July, 1916 | 285 00 | |
| 61051—Expenses | 20 04 | |
| 61038—Salary, August, 1916 | 285 00 | |
| 61232—Expenses | 2 08 | |
| 62129—Salary, September, 1916 | 285 00 | |
| 62213—Expenses | 8 98 | |
| 62340—Salary, October, 1916 | 285 00 | |
| 62862—Expenses | 4 16 | |
| | | $3,533 43 |

Canadian Pacific Railway Company, Montreal, Que.

| | |
|---|---|
| 56487—Freight settlement | $605 82 |
| 56567— " " | 1,013 23 |
| 56569—Claims | 96 39 |
| 56619—Car repairs | 27 74 |
| 56649—Claims | 206 14 |
| 56763—Freight settlement | 405 29 |
| 57011—Tariffs, fuel, ice, repairs to private car | 17 69 |
| 57097—Car repairs | 21 42 |
| 57445—Terminal charges | 656 45 |
| 56526—Freight settlement | 2,051 07 |
| 56574— " " | 2,174 60 |
| 56836—Car service balance | 3,367 51 |
| 57036—Claims | 95 27 |
| 57166—Interline freight balance | 2,153 61 |
| 57230—Car repairs | 48 75 |
| 57578—Terminal charges | 695 13 |
| 56516—Freight settlement | 55 59 |
| 57477— " " | 824 49 |
| 57481— " " | 648 02 |
| 57535— " " | 1,156 22 |
| 57581— " " | 1,854 81 |
| 57695—Tariffs, supplies, commissions, etc. | 20 96 |
| 58017—Claims | 151 50 |
| 58159—Car service balance | 1,918 80 |
| 58301—Passenger car mileage | 6 96 |
| 58309—Ticket balance | 2,991 34 |
| 58341—Interline freight balance | 722 10 |
| 58467—Rental joint facilities | 640 56 |
| 57614—Freight settlement | 853 85 |
| 57636—Freight settlement | 1,675 30 |
| 57716— " " | 1,762 24 |
| 57892—Car repairs, heating cars and tariffs | 67 81 |
| 58058—Car service balance | 1,756 80 |
| 58250—Ticket balance | 386 95 |
| 58488—Rental terminal facilities | 645 38 |
| 58590—Commission on tickets, tariffs | 17 49 |
| 58487—Freight settlement | 2,144 81 |
| 58513— " " | 1,438 47 |
| 58517— " " | 2,002 73 |
| 58655— " " | 4,527 88 |
| 59033—Lead, torpedoes | 14 58 |
| 59081—Claims | 159 89 |
| 59155—Proportion terminal charges | 63 |
| 59213—Car service balance | 1,679 65 |
| 59399—Ticket balance | 888 52 |
| 59471—Car repairs | 84 |
| 59485— " | 44 60 |
| 59613—Rent of facilities, etc. | 701 84 |
| 58646—Freight settlement | 2,489 76 |
| 58680—Claims | 105 89 |
| 58726—Freight settlement | 3,436 42 |
| 58738— " " | 539 48 |
| 58852— " " | 2,351 81 |

CANADIAN PACIFIC RAILWAY COMPANY, MONTREAL, QUE.—*Continued.*

| | |
|---|---|
| 58930—Tariffs supplied | $0 32 |
| 58998—Cylinder head | 12 41 |
| 59024—Claims | 60 33 |
| 59538—Car service balance | 2,222 10 |
| 59730—Ticket balance | 1,506 67 |
| 59643—Freight settlement | 1,538 15 |
| 59645— " " | 1,846 29 |
| 59793—Claims | 243 55 |
| 60137—Car service balance | 1,611 45 |
| 60373—Ticket balance | 1,370 57 |
| 60459—Interline freight settlement | 1,529 33 |
| 60753—Terminal facilities, etc. | 672 53 |
| 60755— " " | 696 13 |
| 59808—Freight settlement | 235 54 |
| 59850— " " | 562 43 |
| 59940—Car repairs | 53 03 |
| 60162—Freight settlement | 307 72 |
| 60358—Terminal charges on European traffic | 1 03 |
| 60418—Car service balance | 1,253 25 |
| 60472—Car repairs | 68 49 |
| 60612—Passenger car mileage | 149 27 |
| 61022—Terminal charges, etc. | 667 36 |
| 61028—Interline freight balance | 6,524 80 |
| 60923—Claims | 35 37 |
| 60925— " | 9 21 |
| 60967—Freight settlement | 10 82 |
| 61055—Tariffs | 4 19 |
| 61161—Claim | 6 00 |
| 61411—Car repairs | 2 50 |
| 61473—Claims | 8 91 |
| 61557—Tariffs supplied | 1 64 |
| 61613—Claim | 1 48 |
| 61677—Car service balance | 942 75 |
| 61853—Passenger car mileage | 15 18 |
| 61859—Ticket balance | 2,444 09 |
| 61871—Claim | 2 48 |
| 62051— " | 11 07 |
| 62109—Terminal charges | 670 80 |
| 62115—Interline freight balance | 2,550 31 |
| 61054—Freight settlement | 138 31 |
| 61090—Steam-heating cars, North Bay | 10 00 |
| 61060—Freight settlement | 2,831 17 |
| 61204— " " | 1,811 19 |
| 61310—Claims | 23 93 |
| 61418— " | 14 41 |
| 61806— " | 80 |
| 61896—Interline freight balance | 5,478 69 |
| 62090—Car service balance | 907 55 |
| 62318—Terminal charges | 681 16 |
| 62324—Ticket balance | 4,313 14 |
| 62137—Freight settlement | 4,091 91 |
| 62191— " " | 1,751 25 |
| 62151— " " | 2,629 64 |
| 62255— " " | 1,932 50 |
| 62615—Heating cars, tariffs, etc. | 126 42 |
| 62795—Car service balance | 1,480 50 |
| 62939—Passenger car mileage | 42 18 |
| 62967—Interline freight balance | 3,311 81 |
| 63219—Car repairs and tariffs | 161 09 |
| 63221—Claims | 20 36 |
| 63223—Terminal facilities | 631 67 |
| 62362—Freight settlement | 358 91 |
| 62364— " " | 1,240 95 |
| 62430— " " | 1,242 95 |
| 62472— " " | 2,297 32 |
| 62496—Supplies, private cars | 1 85 |

CANADIAN PACIFIC RAILWAY COMPANY, MONTREAL, QUE.—*Continued.*

| | |
|---|---|
| 62882—Claim | 13 73 |
| 63042—Fuel, car *Temagami*, tariffs | 8 48 |
| 63224—Claim | 11 34 |
| 63320—Fuel supplied private cars | 3 34 |
| 63442—Car service balance | 1,585 10 |
| 63568—Ticket balance | 2,866 31 |
| 63594—Car repairs | 45 51 |
| 63642—Interline freight balance | 9,426 41 |
| 63672—Claim | 3 73 |
| 63798—Terminal charges, etc. | 685 56 |
| 63808—Ice supplied, etc., car *Temagami* | 1 25 |
| | $136,353 05 |

CANADIAN NORTHERN RAILWAY SYSTEM, TORONTO.

| | |
|---|---|
| 56489—Freight settlement | $519 76 |
| 56581— " " | 623 93 |
| 56695— " " | 537 78 |
| 56775— " " | 562 42 |
| 56947—Car repairs | 3 81 |
| 57293—Interline freight balance | 74 00 |
| 56524—Freight settlement | 1,061 55 |
| 56528— " " | 746 99 |
| 56564— " " | 1,313 68 |
| 56654— " " | 1,581 03 |
| 56854—Car service balance | 28 35 |
| 57562—Interline freight balance | 293 19 |
| 57483—Freight settlement | 1,983 24 |
| 57537— " " | 3,827 64 |
| 57635— " " | 2,218 69 |
| 58177—Car service balance | 278 55 |
| 57608—Freight settlement | 2,640 80 |
| 57616— " " | 1,163 79 |
| 57630— " " | 1,161 26 |
| 57718— " " | 852 35 |
| 58108—Car service balance | 874 80 |
| 58489—Freight settlement | 957 58 |
| 58507— " " | 586 93 |
| 58521— " " | 965 51 |
| 58615— " " | 651 42 |
| 59079—Claims | 88 83 |
| 59249—Car service balance | 1,096 20 |
| 59487—Car repairs | 56 |
| 59559—Interline freight balance | 914 43 |
| 58684—Freight settlement | 874 70 |
| 58730— " " | 944 38 |
| 58736— " " | 1,215 51 |
| 58926— " " | 368 46 |
| 59022—Claim | 3 26 |
| 59358—Car repairs | 4 77 |
| 59576—Car service balance | 752 45 |
| 59633—Freight settlement | 957 55 |
| 59637— " " | 393 44 |
| 59651— " " | 618 26 |
| 59733— " " | 300 18 |
| 59895—Car repairs | 3 91 |
| 59937—Interline freight balance | 100 65 |
| 60177—Car service balance | 487 35 |
| 59830—Freight settlement | 132 14 |
| 59852— " " | 323 19 |
| 59926— " " | 309 05 |
| 60164— " " | 479 08 |
| 60450—Car service balance | 263 25 |
| 61028*a*—Interline freight balance | 867 33 |
| 61028*b*— " " " | 1,063 96 |
| 60839—Freight settlement | 401 27 |

CANADIAN NORTHERN RAILWAY SYSTEM, TORONTO.—*Continued.*

| | | |
|---|---|---|
| 60847—Freight settlement | $108 87 | |
| 60965— " " | 155 91 | |
| 61155— " " | 245 05 | |
| 61369—Car repairs | 1 91 | |
| 61409— " | 1 86 | |
| 62055—Claim | 5 71 | |
| 61050—Freight settlement | 572 86 | |
| 61062— " " | 250 93 | |
| 61064— " " | 632 19 | |
| 61202— " " | 264 45 | |
| 62320—Interline freight balance | 1,585 03 | |
| 62139—Freight settlement | 756 19 | |
| 62149— " " | 245 84 | |
| 62189— " " | 239 79 | |
| 62211— " " | 1,396 05 | |
| 62215—Car repairs | 8 63 | |
| 63227—Interline freight balance | 2,522 44 | |
| 62352—Freight settlement | 495 45 | |
| 62370— " " | 849 85 | |
| 62432— " " | 1,422 88 | |
| 62470— " " | 604 13 | |
| 62624—Car repairs | 10 49 | |
| 63436—Car service balance | 186 30 | |
| 63680—Claim | 18 20 | |
| | | $51,054 22 |

THE CHESAPEAKE & OHIO RAILWAY COMPANY, RICHMOND, VA.

| | | |
|---|---|---|
| 56495—Car repairs | $5 75 | |
| 56943— " | 4 01 | |
| 56844—Car service balance | 38 40 | |
| 58023—Claim No. 8979—Amount charges prepaid on car | 127 16 | |
| 58167—Car service balance | 51 75 | |
| 58078— " " | 81 90 | |
| 59229— " " | 93 15 | |
| 59234—Car repairs | 7 25 | |
| 59554—Car service balance | 188 00 | |
| 60153— " " | 314 80 | |
| 59946—Car repairs | 7 35 | |
| 60036— " | 9 49 | |
| 60434—Car service balance | 86 40 | |
| 61691— " " | 12 60 | |
| 61844—Car repairs | 9 96 | |
| 62104—Car service balance | 110 25 | |
| 62807— " " | 149 85 | |
| 63426— " " | 138 50 | |
| 63604—Car repairs | 76 | |
| 63840— " | 3 29 | |
| | | $1,440 62 |

CENTRAL OF GEORGIA RAILWAY COMPANY, SAVANNAH, GA.

| | | |
|---|---|---|
| 56497—Car repairs | $33 34 | |
| 56842—Car service balance | 27 00 | |
| 58076— " " | 14 85 | |
| 59227— " " | 27 45 | |
| 59552— " " | 34 65 | |
| 60151— " " | 20 25 | |
| 60432— " " | 5 85 | |
| 61689— " " | 45 | |
| 62102— " " | 5 40 | |
| 62805— " " | 26 55 | |
| 63424— " " | 13 05 | |
| | | $208 84 |

CHICAGO & NORTH WESTERN RAILWAY CO., CHICAGO, ILL.

| | | |
|---|---|---|
| 56499—Freight charges and car repairs | $54 53 | |
| 56942—Ticket balance | 1 85 | |
| 57288—Car repairs | 2 79 | |
| 58090—Car service balance | 5 05 | |
| 59239— " " | 58 50 | |
| 59564— " " | 93 15 | |
| 60163— " " | 101 70 | |
| 59944—Car repairs | 18 90 | |
| 60444—Car service balance | 53 10 | |
| 62112— " " | 30 60 | |
| 62224—Ticket balance | 1 85 | |
| 62817—Car service balance | 35 55 | |
| 63598—Car repairs | 41 42 | |
| | | $498 99 |

CHICAGO JUNCTION RAILWAY COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 56501—Car repairs | $54 28 | |
| 56945— " | 13 58 | |
| 57284— " | 20 95 | |
| 58365— " | 2 76 | |
| 59240— " | 87 98 | |
| 59897— " | 1 94 | |
| 59954— " | 9 15 | |
| 61900— " | 5 21 | |
| 62461— " | 1 85 | |
| | | $197 70 |

CHICAGO, ROCK ISLAND & PACIFIC RAILWAY COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 56503—Car repairs | $8 26 | |
| 56995— " | 2 38 | |
| 58165—Car service balance | 12 15 | |
| 58361—Car repairs | 74 19 | |
| 58070—Car service balance | 31 50 | |
| 58072— " " | 4 75 | |
| 59223— " " | 1 80 | |
| 59548— " " | 18 00 | |
| 59795—Claim | 3 18 | |
| 60083—Car repairs | 51 | |
| 60145—Car service balance | 60 30 | |
| 60428— " " | 78 50 | |
| 60929—Claim | 1 46 | |
| 60931— " | 3 39 | |
| 61269—Car repairs | 14 00 | |
| 61685—Car service balance | 44 10 | |
| 61840—Car repairs | 53 00 | |
| 62018— " | 6 02 | |
| 62098—Car service balance | 38 20 | |
| 62797— " " | 90 | |
| 62554—Claim | 6 27 | |
| 63746—Car repairs | 27 27 | |
| | | $490 13 |

CHICAGO, MILWAUKEE & ST. PAUL RAILWAY COMPANY, CHICAGO, ILL.

| | |
|---|---|
| 56505—Car repairs | $46 10 |
| 56955— " | 25 19 |
| 56997— " | 90 01 |
| 58405— " | 82 16 |
| 58062—Car service balance | 12 90 |
| 59489—Car repairs | 7 62 |
| 59236— " | 58 36 |
| 59542—Car service balance | 82 70 |
| 59893—Car repairs | 83 03 |
| 60147—Car service balance | 85 05 |

CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, ETC.—*Continued.*

| | | |
|---|---|---|
| 59952—Car repairs | 27 39 | |
| 60042— " | 8 40 | |
| 60422—Car service balance | 85 95 | |
| 60470—Car repairs | 44 88 | |
| 61277— " | 55 | |
| 61681—Car service balance | 29 70 | |
| 61838—Car repairs | 8 06 | |
| 63844— " | 12 37 | |
| | | $790 42 |

MISS LUCY COLES, MILBERTA, ONT.

| | | |
|---|---|---|
| 56555—Loss account, shortage, suit case, Claim No. 10479 | $35 00 | |
| | | $35 00 |

THE CENTRAL FREIGHT ASSOCIATION, CHICAGO, ILL.

| | | |
|---|---|---|
| 56599—Tariffs | $0 78 | |
| 57229— " | 59 | |
| 57170— " | 57 | |
| 58095— " | 49 | |
| 57932— " | 54 | |
| 59151— " | 73 | |
| 58938—Group maps | 5 00 | |
| 60211—Tariffs | 98 | |
| 61053— " | 46 | |
| 62277— " | 32 | |
| 63048—Tariffs | 22 | |
| | | $10 68 |

THE CANADIAN FREIGHT ASSOCIATION, MONTREAL, P.Q.

| | | |
|---|---|---|
| 56601—Proportion expenses | $33 15 | |
| 57017— " " | 34 06 | |
| 57132— " " | 34 80 | |
| 58097— " " | 35 38 | |
| 57930— " " | 36 01 | |
| 59153— " " | 35 55 | |
| 60001— " " | 33 25 | |
| 60213— " " | 35 86 | |
| 60986— " " | 35 24 | |
| 61117—Freight classification | 1 01 | |
| 61555—Proportion expenses | 35 01 | |
| 61342— " " | 34 68 | |
| 62153—Tariffs and classifications | 5 71 | |
| 62353—Proportion expenses | 34 93 | |
| 62974—Proportion expenses | 35 34 | |
| | | $459 98 |

THE COBALT DAILY NUGGET, LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 56603—Advertising and forms | $44 52 | |
| 57227— " " | 21 84 | |
| 57172— " " | 30 75 | |
| 57743— " " | 21 00 | |
| 57934— " " | 21 00 | |
| 59569— " " | 23 09 | |
| 59999— " " | 21 69 | |
| 60411— " " | 24 94 | |
| 60735— " " | 10 71 | |
| 60642— " " | 9 00 | |
| 60926— " " | 23 34 | |
| 61567— " " | 21 38 | |
| 62035— " " | 8 40 | |
| 61614— " " | 23 79 | |
| 62697—Forms | 11 10 | |

THE COBALT DAILY NUGGET, LIMITED, COBALT, ONT.—*Continued.*

| | | |
|---|---|---|
| 63151—Advertising | 52 89 | |
| 62708—Subscription | 3 00 | |
| 62844—Car cards | 3 50 | |
| | | $375 94 |

CHICAGO & EASTERN ILLINOIS RAILROAD, CHICAGO, ILL.

| | | |
|---|---|---|
| 56621—Car repairs | $16 86 | |
| 56795— " " | 74 | |
| 56838— " service balance | 16 65 | |
| 58363— " repairs | 2 16 | |
| 58066— " service balance | 11 25 | |
| 59219— " " | 40 95 | |
| 59546— " " | 10 35 | |
| 59899— " repairs | 49 | |
| 60141— " service balance | 24 75 | |
| 60048— " repairs | 1 48 | |
| 60424— " service balance | 20 25 | |
| 61683— " " | 15 75 | |
| 62094— " " | 8 55 | |
| 62801— " " | 12 60 | |
| 63418— " " | 7 65 | |
| 63740— " repairs | 7 43 | |
| | | $197 91 |

CHICAGO, BURLINGTON & QUINCY RAILROAD COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 56623—Car repairs | $6 83 | |
| 56651—Claim | 2 66 | |
| 56683—Car repairs | 35 44 | |
| 57048—Claims | 6 70 | |
| 57232—Car repairs and duty on parts | 24 14 | |
| 58367— " " | 85 66 | |
| 58084— " service balance | 49 95 | |
| 58693—Claims | 6 98 | |
| 59087— " | 57 44 | |
| 59235—Car service balance | 98 55 | |
| 59130—Claim | 4 36 | |
| 59238—Car repairs | 34 31 | |
| 59560—Car service balance | 104 75 | |
| 59791—Claim | 3 23 | |
| 59903—Car repairs | 2 02 | |
| 60159— " service balance | 59 85 | |
| 59948— " repairs | 7 17 | |
| 60038— " " | 14 70 | |
| 60440— " service balance | 92 70 | |
| 60620—Ticket balance | 4 35 | |
| 60927—Claim | 54 56 | |
| 61475— " | 3 27 | |
| 61615— " | 3 42 | |
| 61697—Car service balance | 44 55 | |
| 61446—Claim | 2 95 | |
| 61808— " | 2 94 | |
| 62020—Car repairs | 43 53 | |
| 62032—Claim | 2 40 | |
| 62108—Car service balance | 8 10 | |
| 62459—Car repairs | 18 21 | |
| 62635—Claim | 3 23 | |
| 63181— " | 5 50 | |
| 62888— " | 1 86 | |
| 63744—Car repairs | 43 25 | |
| | | $939 56 |

A. Cavanagh, Tie Inspector, North Bay, Ont.

| | | | |
|---|---|---|---|
| 56773—Travelling expenses | | $13 25 | |
| 56958— " " | | 3 25 | |
| 59663— " " | | 27 80 | |
| 61609— " " | | 4 20 | |
| 62456— " " | | 8 50 | |
| | | | $57 00 |

Canadian Pacific Railway Company's Telegraph.

| | | | |
|---|---|---|---|
| 56777—Telegraph service | | $4 59 | |
| 57447— " interchange | | 489 46 | |
| 56660— " service | | 1 43 | |
| 56662— " " | | 93 | |
| 56714— " " | | 3 73 | |
| 57178— " " | | 4 56 | |
| 57564— " interchange | | 318 64 | |
| 58099— " service | | 6 81 | |
| 58469— " interchange | | 374 51 | |
| 57894— " service | | 4 16 | |
| 58532— " " | | 4 88 | |
| 58592— " interchange | | 427 86 | |
| 58765— " service | | 6 54 | |
| 59157— " " | | 15 08 | |
| 59573— " interchange balance | | 433 40 | |
| 58928— " service | | 4 18 | |
| 59454— " " | | 2 13 | |
| 59758— " interchange | | 493 86 | |
| 59760— " service | | 18 73 | |
| 59782— " " | | 13 20 | |
| 59935— " " | | 3 80 | |
| 60743— " " | | 3 51 | |
| 60761— " " | | 8 18 | |
| 60765— " interchange | | 391 38 | |
| 60928— " service | | 1 40 | |
| 61024— " interchange | | 525 96 | |
| 61115— " service | | 5 40 | |
| 61949— " " | | 14 02 | |
| 62009— " " | | 1 82 | |
| 62087— " " | | 28 56 | |
| 62111— " interchange | | 594 47 | |
| 62250— " service | | 2 19 | |
| 62326— " interchange | | 673 96 | |
| 63147— " service | | 3 66 | |
| 63231— " interchange | | 464 80 | |
| 63098— " service | | 27 18 | |
| 63156— " " | | 20 28 | |
| 63584— " " | | 43 07 | |
| 63652— " " | | 3 25 | |
| 63804— " " | | 25 43 | |
| 63850— " interchange | | 119 73 | |
| | | | $5,590 73 |

Canadian Car Service Bureau, Montreal, Que.

| | | |
|---|---|---|
| 56779—Proportion cost operation | $21 16 | |
| 56656— " " | 22 14 | |
| 57174— " " | 20 24 | |
| 57750— " " | 27 17 | |
| 58528— " " | 26 70 | |
| 59159— " " | 25 63 | |
| 59756— " " | 25 19 | |
| 60215— " " | 27 90 | |
| 60980— " " | 20 49 | |
| 61274— " " | 25 23 | |

CANADIAN CAR SERVICE BUREAU, MONTREAL, QUE.—*Continued.*

| | | |
|---|---|---|
| 62248—Proportion cost operation | $22 83 | |
| 62355— " " | 24 13 | |
| 63102— " " | 26 50 | |
| | | $315 31 |

CHICAGO GREAT WESTERN RAILROAD COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 56797—Car repairs | $6 83 | |
| 57001— " " | 3 41 | |
| 58171— " service balance | 12 15 | |
| 58086— " " | 16 65 | |
| 59237— " " | 44 10 | |
| 59562— " " | 23 60 | |
| 60027— " repairs | 1 13 | |
| 60161— " service balance | 19 80 | |
| 60442— " " | 18 00 | |
| 61273— " repairs | 1 04 | |
| 61699— " service balance | 6 75 | |
| 61902— " repairs | 73 | |
| 62110— " service balance | 34 20 | |
| 62813— " " | 4 50 | |
| 63430— " " | 14 40 | |
| 63730— " repairs | 3 49 | |
| | | $210 78 |

S. B. CLEMENT, CHIEF ENGINEER AND SUPERINTENDENT OF MAINTENANCE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56809—Salary, November, 1915 | $345 00 | |
| 56636— " December, 1915 | 345 00 | |
| 57020—Expenses | 24 40 | |
| 57619— " | 24 25 | |
| 57645—Salary, January, 1916 | 345 00 | |
| 57708—Expenses | 21 55 | |
| 57734—Salary, February, 1916 | 345 00 | |
| 58595—Expenses | 33 05 | |
| 58659—Salary, March, 1916 | 345 00 | |
| 58810— " April, 1916 | 345 00 | |
| 59699—Expenses | 38 25 | |
| 59817—Salary, May, 1916 | 345 00 | |
| 60212— " June, 1916 | 345 00 | |
| 60262—Expenses | 65 20 | |
| 61323—Salary, July, 1916 | 345 00 | |
| 61184— " August, 1916 | 345 00 | |
| 61340—Expenses | 31 53 | |
| 62243—Salary, September, 1916 | 345 00 | |
| 62600— " October, 1916 | 345 00 | |
| 62756—Expenses | 49 38 | |
| | | $4,427 61 |

CHARLES CADDEN, TYRESETTER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56821—Award, W. C. B., *re* injuries alleged received | $12 59 | |
| | | $12 59 |

CANADIAN CONSOLIDATED RUBBER COMPANY, LIMITED, TORONTO.

| | |
|---|---|
| 56829—Hose and packing | $203 11 |
| 56550—Hose and rubber goods | 149 88 |
| 56614—Rubber bands | 20 24 |
| 56664—Gaskets and packing | 7 45 |
| 57491—Hose, packing, boots and bands | 134 44 |
| 57591—Boots and hose bags | 91 04 |
| 57663—Hose | 198 97 |
| 57650—Hose, boots and force cups | 124 51 |
| 57792—Packing, matting and hose | 189 27 |

CANADIAN CONSOLIDATED RUBBER COMPANY, LIMITED, TORONTO.—*Continued.*

| | | |
|---|---|---|
| 58551—Packing, washers and hose | 151 27 | |
| 58651—Hose and rubber bands | 442 91 | |
| 58658—Men's Cabot fusion | 54 00 | |
| 58758—Water hose, packing, etc. | 29 67 | |
| 58864—Packing, hose and boots | 68 87 | |
| 58986—Rubber bands | 22 54 | |
| 59669—Valves | 10 19 | |
| 59827—Packing, Cabots | 39 81 | |
| 60124—Packing, hose, etc. | 397 08 | |
| 60208—Hose, valves, matting | 78 26 | |
| 60878—Packing, rings | 5 16 | |
| 61007—Hose, couplings, plugs | 27 78 | |
| 61901—Cabot, boots | 23 40 | |
| 61620—Bands, hose, couplings | 114 78 | |
| 62215—Rubber bands | 22 77 | |
| 62391—Hose, sprinklers, etc. | 296 66 | |
| 62689—Hose | 38 00 | |
| 62384—Fusion | 9 95 | |
| 62590—Hose | 16 64 | |
| 63062—Hose | 18 82 | |
| | | $2,987 47 |

THOS. COOK & SON, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56835—Commission on ticket sales | $0 92 | |
| 58522— " " | 1 93 | |
| 59163— " " | 1 23 | |
| 62704— " " | 6 43 | |
| | | $10 51 |

F. T. CADE, MACHINIST, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56865—Travelling expenses | $2 15 | |
| 58637— " " | 2 50 | |
| | | $4 65 |

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS RY. CO., CINCINNATI, OHIO.

| | | |
|---|---|---|
| 56887—Duty and freight on car repair parts | $5 95 | |
| 58311—Ticket balance | 6 82 | |
| 59497—Car repairs | 1 10 | |
| 59258— " " | 11 33 | |
| 61373— " " | 22 | |
| 61842— " " | 27 01 | |
| 62463— " " | 2 71 | |
| 63602— " " | 11 88 | |
| | | $67 02 |

CANADIAN SHOVEL & TOOL COMPANY, LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 56891—Shovels | $63 31 | |
| 57493— " | 42 75 | |
| 58555— " | 71 25 | |
| 58660— " | 14 25 | |
| 58866— " | 158 27 | |
| 59967— " | 126 62 | |
| 60122— " | 7 92 | |
| 61682— " | 135 66 | |
| 62361— " | 83 09 | |
| | | $703 12 |

BERNARD CAIRNS, TORONTO.

| | | |
|---|---|---|
| 56921—Rubber stamps | $0 80 | |
| 58324—Steel figures and letters | 16 00 | |
| 58535—Colonial dater | 2 00 | |
| | | $18 80 |

CANADIAN GOVERNMENT RAILWAYS, MONCTON, N.B.

| | |
|---|---|
| 56923—Gas, shifting load, car repairs | $22 48 |
| 56700—Freight settlement | 342 34 |
| 56856—Car service balance | 886 17 |
| 57044—Claim | 1 65 |
| 57224—Freight settlement | 30 06 |
| 57697—Car repairs, commission | 36 76 |
| 58299—Passenger car mileage | 268 18 |
| 57782—Rental right of way for pipe line | 1 00 |
| 57896—Commission on tickets | 52 |
| 58110—Car service balance | 287 55 |
| 58246—Passenger car mileage | 356 73 |
| 58885—Claim | 1 33 |
| 59251—Car service balance | 749 25 |
| 59393—Passenger car mileage | 308 66 |
| 59401—Ticket balance | 65 19 |
| 59439—Proportion commission paid on tickets | 24 22 |
| 59561—Interline freight balance | 170 85 |
| 59018—Claim | 5 28 |
| 59020—Claims | 26 21 |
| 59578—Car service balance | 1,592 10 |
| 59724—Passenger car mileage | 488 29 |
| 59997—Proportion commission on business | 9 42 |
| 60023—Car repairs | 22 99 |
| 60059— " " | 96 |
| 60109—Claims | 19 80 |
| 60179—Car service balance | 517 92 |
| 60365—Passenger car mileage | 321 31 |
| 60413—Car repairs | 23 45 |
| 60415—Commission on tickets | 26 54 |
| 60451—Claims | 12 45 |
| 59918— " | 17 38 |
| 59942—Car repairs | 5 57 |
| 60544— " service balance | 47 70 |
| 60614—Passenger car mileage | 475 64 |
| 60977—Claims | 82 75 |
| 61159— " | 1 98 |
| 61367—Car repairs | 173 58 |
| 61851—Passenger car mileage | 503 47 |
| 62053—Claims | 30 63 |
| 61096—Car repairs | 13 24 |
| 61136—Proportion commission paid agents | 7 57 |
| 61276—Transferring coal, T. & N. O. 60605 | 1 21 |
| 61304—Coal and ice supplied | 64 |
| 61364—Claims | 3 70 |
| 61454—Commissiou paid on tickets | 5 35 |
| 61666—Claims | 26 67 |
| 61668— " | 46 09 |
| 61722— " | 30 24 |
| 61782— " | 40 43 |
| 61846—Car repairs | 16 13 |
| 61892—Claims | 54 18 |
| 61960—Car repairs | 29 58 |
| 62034—Claim | 1 73 |
| 62218—Passenger car mileage | 481 17 |
| 62228—Ticket balance | 842 02 |
| 62169—Commission on westbound business | 3 40 |
| 62715—Claims | 65 59 |
| 62937—Passenger car mileage | 394 11 |
| 63093—Claims | 10 21 |
| 62386—Rental right of way for pipe line | 1 00 |
| 62760—Freight settlement | 2,014 91 |
| 62884—Claims | 28 38 |
| 63372—Fuel supplied car "Sir James" | 10 55 |
| 63524—Car service balance | 273 81 |
| 63570—Ticket balance | 579 49 |

CANADIAN GOVERNMENT RAILWAYS, MONCTON, N.B.—*Continued.*

| | | |
|---|---|---|
| 63592—Car repairs | 22 63 | |
| 63678—Claims | 79 25 | |
| 63748—Car repairs | 3 54 | |
| 63806—Supplies, car "Temagami" | 6 50 | |
| 63836—Car repairs | 26 65 | |
| | | $13,078 33 |

ADOLPHE CHARPENTIER, CONNAUGHT, ONT.

| | | |
|---|---|---|
| 56925—Donation, account cow alleged killed | $25 00 | |
| | | $25 00 |

THE CHICAGO & ALTON RAILROAD COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 56949—Car repairs | $2 58 | |
| 56959— " " | 5 25 | |
| 57290— " " | 3 42 | |
| 58161—Car service balance | 4 95 | |
| 58060— " " | 4 50 | |
| 59215— " " | 4 90 | |
| 59232— " repairs | 8 16 | |
| 59540— " service balance | 7 65 | |
| 60139— " " | 8 10 | |
| 60420— " " | 3 15 | |
| 61265—Car repairs | 62 | |
| 62457— " " | 9 05 | |
| 62799— " service balance | 5 85 | |
| 63416— " " | 22 95 | |
| 63842— " repairs | 5 21 | |
| | | $96 34 |

THE CENTRAL RAILROAD COMPANY OF NEW JERSEY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56951—Car repairs | $0 25 | |
| | | $0 25 |

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC RAILWAY COMPANY, CINCINNATI, OHIO.

| | | |
|---|---|---|
| 56953—Car repairs | $3 44 | |
| 56840— " service balance | 22 95 | |
| 58074— " " | 12 00 | |
| 59225— " " | 14 85 | |
| 59230— " repairs | 71 | |
| 59550— " service balance | 43 20 | |
| 60025— " repairs | 89 | |
| 60149— " service balance | 19 35 | |
| 60430— " " | 11 70 | |
| 61687— " " | 24 30 | |
| 62100— " " | 90 | |
| 62803— " " | 22 05 | |
| 63422— " " | 13 50 | |
| 63742— " repairs | 19 37 | |
| | | $209 21 |

THE CHICAGO, ROCK ISLAND & GULF RAILWAY COMPANY, FORT WORTH, TEXAS.

| | | |
|---|---|---|
| 56957—Car repairs | $1 17 | |
| 59429— " " | 41 | |
| 61679— " service balance | 1 80 | |
| 62092— " " | 1 35 | |
| 63414— " " | 12 50 | |
| | | $17 23 |

CINCINNATI, HAMILTON & DAYTON RAILWAY COMPANY, CINCINNATI, OHIO.

| | | | |
|---|---|---|---|
| 56999—Car repairs | | $4 03 | |
| 57286— " " | | 74 | |
| 58082— " service balance | | 16 20 | |
| 59233— " " | | 36 90 | |
| 59558— " " | | 10 35 | |
| 60157— " " | | 21 15 | |
| 60438— " " | | 33 75 | |
| 60468— " repairs | | 5 49 | |
| 61267— " " | | 2 27 | |
| 61695— " service balance | | 4 95 | |
| 62811— " " | | 4 95 | |
| 63217— " repairs | | 1 74 | |
| 63600— " " | | 1 95 | |
| 63750— " " | | 1 93 | |
| | | | $146 40 |

COLLECTOR OF CUSTOMS, NORTH BAY, ONT.

| | | | |
|---|---|---|---|
| 57009—Duty on coal, etc. | | $3,309 60 | |
| 56652— " soft coal, etc. | | 3,091 42 | |
| 57485— " steel cars | | 19,149 75 | |
| 57633— " coal | | 3,402 24 | |
| 57626— " electros and half-tones | | 25 62 | |
| 57714— " soft coal, etc. | | 5,126 61 | |
| 58619— " " | | 5,795 07 | |
| 58686— " " | | 4,113 35 | |
| 58728— " " | | 4,999 10 | |
| 58796— " " | | 4,192 81 | |
| 59635— " " | | 2,739 90 | |
| 59839— " " | | 2,367 54 | |
| 59828— " " | | 2,405 95 | |
| 59878— " " | | 2,052 89 | |
| 60827— " " | | 1,272 22 | |
| 60963— " " | | 1,665 74 | |
| 61066— " " | | 522 87 | |
| 61068— " " | | 940 49 | |
| 61210— " " | | 1,504 80 | |
| 62147— " " | | 2,261 30 | |
| 62171— " " | | 2,025 52 | |
| 62233— " " | | 1,625 65 | |
| 62356— " " | | 1,263 87 | |
| 62390— " " | | 1,703 13 | |
| 62770— " " | | 1,369 42 | |
| | | | $78,926 86 |

COCHRANE STEAM LAUNDRY, COCHRANE, ONT.

| | | | |
|---|---|---|---|
| 57013—Laundry | | $45 46 | |
| 56718— " | | 19 06 | |
| 58433— " | | 19 18 | |
| 58524— " | | 26 02 | |
| 58526— " | | 26 00 | |
| 59567— " | | 28 24 | |
| 59762— " | | 23 63 | |
| 60072— " | | 23 61 | |
| 60982— " | | 27 13 | |
| 62089— " | | 20 12 | |
| 61616— " | | 20 13 | |
| 62498— " | | 23 86 | |
| 63324— " | | 19 09 | |
| | | | $321 53 |

THE COURIER PRINTING COMPANY, ENGLEHART, ONT.

| | | |
|---|---|---|
| 57015—Electros | $50 00 | |
| 63322—Advertising | 30 08 | |
| | | $80 08 |

THE CHARLTON-ENGLEHART LIGHT & POWER COMPANY, CHARLTON, ONT.

| | | |
|---|---|---|
| 57019—Current supplied | $3 30 | |
| 57413— " | 127 06 | |
| 56716— " | 3 40 | |
| 57176— " | 6 20 | |
| 57566— " | 144 34 | |
| 58435— " | 141 22 | |
| 57748— " | 3 20 | |
| 58530— " | 2 20 | |
| 58594— " | 141 76 | |
| 59147— " | 144 65 | |
| 59458— " | 121 78 | |
| 59766— " | 3 80 | |
| 60409— " | 3 20 | |
| 60741— " | 138 15 | |
| 60666— " | 155 39 | |
| 62005— " | 131 50 | |
| 61338— " | 9 30 | |
| 62252— " | 108 54 | |
| 62254— " | 5 20 | |
| 63145— " | 107 05 | |
| 62500— " | 4 80 | |
| 63374— " | 149 81 | |
| 63650— " | 4 10 | |
| | | $1,659 95 |

B. J. COGHLIN COMPANY, LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57141—Springs, tommy bars | $6 84 | |
| 57370—Tail pockets and springs | 114 75 | |
| 58326—Coupling springs | 48 13 | |
| 59031—Chain, bars | 50 56 | |
| 58994—Steel chain, ropes | 117 60 | |
| 60497—Chain | 10 20 | |
| 60302—Wrecking chains, tommy bars | 55 19 | |
| 60694—Brakes, springs, etc. | 432 50 | |
| 60886—Chains | 5 71 | |
| | | $841 48 |

CANADIAN FAIRBANKS-MORSE COMPANY, TORONTO.

| | | |
|---|---|---|
| 57149—Pulley, packing, battery supplies, etc. | $80 78 | |
| 57341—Claim No. 10302—Overcharge on steel | 3 17 | |
| 57046—Claims No. 10187 and 10382—Overcharge rate on scales and freight on pipe fittings | 5 52 | |
| 57376—Pulley, gears, graphite, etc. | 48 04 | |
| 57398—Packing | 11 29 | |
| 57833—Packing and belt dressing | 31 36 | |
| 58300—Belt, graphite, zinc, soda and oil | 219 05 | |
| 58911—Rivets, plates, etc. | 249 08 | |
| 58992—Pumper, emery powder, etc. | 771 50 | |
| 60493—Graphite, plumbago | 10 83 | |
| 60702—Velocipede cars, graphite | 132 00 | |
| 60872—Water box, castings, etc. | 155 52 | |
| 61009—Scale lever, steam pump | 277 80 | |
| 61129—Vulcan chain, wrench | 9 18 | |
| 61903—Clips | 8 16 | |
| 61504—Tube | 3 60 | |
| 61684—Graphite, plugs, etc. | 15 37 | |
| 62725—Brackets, springs, etc. | 19 43 | |
| 62626—Tube, conductor for motor | 9 10 | |

CANADIAN FAIRBANKS-MORSE COMPANY, TORONTO.—*Continued.*

| | | |
|---|---|---|
| 62828—Belt | 316 25 | |
| 63060—Air cocks, tee handles, etc. | 11 16 | |
| 63272—Palmetto packing | 44 56 | |
| | | $2,432 75 |

CHARCOAL SUPPLY COMPANY, TORONTO.

| | | |
|---|---|---|
| 57151—Jute sacks and charcoal | $18 25 | |
| 57390— " " | 16 41 | |
| 57841— " " | 24 00 | |
| 58921— " " | 42 15 | |
| 60479— " " | 19 57 | |
| 61897— " " | 20 88 | |
| 61512— " " | 31 17 | |
| 63064— " " | 23 31 | |
| | | $195 74 |

CANADIAN GENERAL ELECTRIC CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 57153—Electrical material | $47 60 | |
| 57366—Lamps, repairing metre | 22 39 | |
| 57809—Electrical goods | 68 63 | |
| 58296—Electrical material | 28 66 | |
| 58995—Switches, cut outs, etc. | 12 22 | |
| 58978—Electrical material | 142 93 | |
| 60569—Fish wire, plates, etc. | 115 79 | |
| 60712—Tape, indicators, torches | 21 10 | |
| 60930—Holders, alphaduct, etc. | 23 37 | |
| 61127—Tube | 40 | |
| 61506—Sockets | 73 | |
| 61678—Springs, alphaduct | 20 25 | |
| 63111—Sockets, bushings, etc. | 42 75 | |
| 62622—Metal shell receptacles | 3 66 | |
| 62838—Fuses | 3 78 | |
| | | $554 26 |

A. D. COOK, LAWRENCEBURG, IND.

| | | |
|---|---|---|
| 57155—Spur gear | $65 00 | |
| | | $65 00 |

THE CANADA PAINT CO., LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57157—Paints, putty, turps., etc. | $475 08 | |
| 57378— " | 55 66 | |
| 57801— " | 497 76 | |
| 58322— " and varnishes | 188 50 | |
| 58871— " lead, putty, etc. | 786 98 | |
| 59038— " | 142 93 | |
| 60483— " etc. | 307 05 | |
| 60692— " turps, shellac | 611 99 | |
| 60888— " | 156 07 | |
| 61013—Turpentine | 26 52 | |
| 61121—Paint, white lead, putty | 259 20 | |
| 62699—Paint, white lead, etc. | 715 39 | |
| 62588—Pumice stone | 2 45 | |
| 63058—Paint, varnish, etc. | 553 31 | |
| | | $4,778 89 |

CANADIAN RAMAPO IRON WORKS, LIMITED, NIAGARA FALLS, ONT.

| | | |
|---|---|---|
| 57159—Compromise splices | $24 00 | |
| 57837—Switch stands, braces and slide plates | 327 16 | |
| 58318—Castings | 18 00 | |
| 59052—Malleable handles | 13 80 | |
| 60696—Switch stands | 111 00 | |
| 61139—Frogs, switches | 1,727 25 | |
| 61674—Frogs, switches | 387 25 | |
| 63054—Switch stands, frogs, etc. | 1,917 45 | |
| | | $4,525 91 |

THE CLEVELAND-SARNIA SAW MILLS CO., LIMITED, SARNIA, ONT.

| | | |
|---|---|---|
| 57161—Track scales | $350 00 | |
| 57393—Claim No. 8646, loss account shortage five bales angle bars | 28 75 | |
| | | $378 75 |

THE CANADA METAL CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 57163—Pig lead | $67 21 | |
| 57400—Zinc and copper | 87 50 | |
| 57817—Metals | 150 28 | |
| 57928—Metals and lead pipe | 56 06 | |
| 58314—Zincs, coppers for batteries | 250 00 | |
| 58747—Metals | 120 16 | |
| 59044—Metals | 144 36 | |
| 60501—Zinc, lead, metal | 181 18 | |
| 61119—Battery coffers | 12 50 | |
| 61895—Babbitt, solder | 90 53 | |
| 62703—Babbitt, solder | 198 40 | |
| | | $1,358 18 |

THE CARTER'S INK COMPANY, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57165—Ink and mucilage | $108 25 | |
| 60495— " " | 36 25 | |
| 60710— " " | 44 38 | |
| 61569—Ribbons for typewriter | 56 62 | |
| 61470—Carbon paper | 4 00 | |
| 61622—Ink | 25 75 | |
| 62705—Mucilage | 8 50 | |
| | | $283 75 |

CANADIAN CAR & FOUNDRY CO., LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57167—Castings, car parts | $44 15 | |
| 57380—Brake beams and centre plates | 223 00 | |
| 57396—Centre plates | 5 00 | |
| 57803—Bearings and art glass | 13 80 | |
| 59046—Connecting pins, brake beams | 102 50 | |
| 61510—Brake beams | 123 00 | |
| 62727— " | 54 00 | |
| 62824— " | 124 70 | |
| 63270—Castings, etc. | 47 45 | |
| | | $737 60 |

COWAN & COMPANY OF GALT, LIMITED, GALT, ONT.

| | | |
|---|---|---|
| 57169—Knives | $5 05 | |
| 59050—Knives | 30 08 | |
| | | $35 13 |

CANADIAN YALE & TOWNE, LTD., ST. CATHARINES, ONT.

| | | |
|---|---|---|
| 57171—Latches | $8 16 | |
| 57372—Padlocks and sheaves | 44 84 | |
| 57825— " latches | 36 22 | |
| 58917— " | 22 59 | |
| 59040— " keys | 24 09 | |
| 60360— " | 23 49 | |
| 60680—Locks | 8 16 | |
| 61371—Blanks | 99 | |
| 61582—Padlocks | 8 62 | |
| 62389—Latches | 19 67 | |
| 62628—Padlocks | 40 28 | |
| | | $237 11 |

CRUCIBLE STEEL COMPANY OF AMERICA, PITTSBURG, PA.

| | | |
|---|---|---|
| 57173—Steel | $33 80 | |
| | | $33 80 |

CRAIN PRINTERS, LTD., OTTAWA, ONT.

| | | |
|---|---|---|
| 57175—Forms | $51 87 | |
| 57827— " and time sheets | 11 03 | |
| 58809—Time slips, bills of lading | 27 25 | |
| 59000—Forms | 2 47 | |
| 60356—Time sheets | 17 50 | |
| 60714—Forms | 57 25 | |
| 61201—Binders | 3 80 | |
| 61472—Forms | 13 25 | |
| 61618— " | 50 63 | |
| 62693— " | 36 95 | |
| 62840—Way bills | 13 75 | |
| | | $285 75 |

THE CHAS. CHAPMAN CO., LONDON, ONT.

| | | |
|---|---|---|
| 57177—Books, forms | $75 75 | |
| 57358—Account books and forms | 172 30 | |
| 58320—Forms, memo books and way bills | 44 10 | |
| 58919— " | 88 35 | |
| 59008—Stationery | 90 75 | |
| 60487—Forms | 21 00 | |
| 61141—Memo. book forms | 18 48 | |
| 61624—Forms | 35 75 | |
| 62695— " | 17 78 | |
| | | $564 26 |

CANADIAN LOCOMOTIVE COMPANY, LTD., KINGSTON, ONT.

| | | |
|---|---|---|
| 57179—Ash pan guides | $92 00 | |
| 57408—Tithe sheet | 80 00 | |
| 57829—Ash pan guides and slides | 86 64 | |
| 58316—Ferrules, tubes, guides and slides | 184 95 | |
| 58873—Rack shafts | 23 85 | |
| 58982—Engine truck frame | 30 38 | |
| 60515—Castings, frames, etc. | 333 60 | |
| 62691—Coupling rod strap | 36 75 | |
| 62834—Draw bars, etc. | 437 52 | |
| 63030—Locomotives | 100,485 00 | |
| 63032— " | 67,015 00 | |
| 63648—Locomotive and locomotive parts | 37,351 00 | |
| | | $206,156 69 |

CANADIAN PNEUMATIC TOOL COMPANY, LTD., MONTREAL, P.Q.

| | | |
|---|---|---|
| 57193—Machine bits | $9 00 | |
| 57404—Auger bits | 6 94 | |
| 58328—Repairing hammer | 14 43 | |
| 58913— " drill | 152 61 | |
| 59048—Breast drill | 63 00 | |
| 60503—Repairs to chipper | 12 94 | |
| 60708— " " | 32 09 | |
| 60876— " parts | 51 87 | |
| | | $342 88 |

CANADA GRIP NUT COMPANY, LTD., MONTREAL, P.Q.

| | | |
|---|---|---|
| 57195—Grip nuts | $36 01 | |
| 57813— " " | 13 13 | |
| 60481— " " | 16 00 | |
| | | $65 14 |

W. H. COE MANUFACTURING COMPANY, PROVIDENCE, R.I., U.S.A.

| | | |
|---|---|---|
| 57197—Gold leaf, etc. | $20 15 | |
| 57839—Paints | 25 42 | |
| 58332—Gold leaf and aluminum | 10 69 | |
| 58805—Gold leaf | 30 70 | |

W. H. Coe Manufacturing Company, Etc.—*Continued.*

| | | |
|---|---|---|
| 60690—Gold ribbon and aluminum | $26 09 | |
| 61133— " " | 16 66 | |
| 61676— " " and aluminum | 15 83 | |
| 63052— " " etc. | 42 15 | |
| | | $187 69 |

Canadian Wm. A. Rogers, Ltd., Toronto, Ont.

| | | |
|---|---|---|
| 57199—Knives and forks | $16 80 | |
| 58304—Reflectors replated and refinished | 11 50 | |
| 58976— " " | 43 30 | |
| 60505— " | 24 73 | |
| 61048—E. P. B. M. shield | 33 00 | |
| 63264—Eudora fruit knives, etc. | 18 31 | |
| | | $147 64 |

The Cain Coal Company, North Cobalt, Ont.

| | | |
|---|---|---|
| 57343—Claim No. 10415, damage to doors | $10 35 | |
| | | $10 35 |

Canadian Express Company, North Bay, Ont.

| | | |
|---|---|---|
| 57411—Express charges | $34 31 | |
| 57168— " " | 22 68 | |
| 58437— " " | 37 22 | |
| 58534— " " | 27 75 | |
| 59575— " " | 28 19 | |
| 59456— " " | 19 78 | |
| 60763— " " | 40 48 | |
| 60644— " " | 28 92 | |
| 62007— " " | 26 90 | |
| 61784— " " | 23 40 | |
| 62969— " " | 36 88 | |
| 63852— " " | 27 39 | |
| | | $353 90 |

Canadian Westinghouse Company, Ltd., Hamilton, Ont.

| | | |
|---|---|---|
| 57415—Air brake and electrical material | 120 60 | |
| 57402— " " material | 5 06 | |
| 57805—Fittings | 243 24 | |
| 58358— " metre, valves, etc. | 242 51 | |
| 59133—Air brake material | 199 38 | |
| 58877— " " | 22 42 | |
| 59012—Valves, springs, etc. | 166 19 | |
| 60571—Cases, vents, rings, etc. | 396 35 | |
| 60704—Rings, cages, bushes | 73 80 | |
| 60882—Armature, adjuster, etc. | 250 36 | |
| 61135—Fans, switches, etc. | 322 03 | |
| 61907—Seat, latch, rings | 28 80 | |
| 61670—Springs, air brake material | 88 17 | |
| 61724—Meters, expanders, etc. | 218 32 | |
| 62971—Air brake material | 119 35 | |
| 62630— " pistons, etc. | 34 12 | |
| 62836—Underground reel, bushes, etc. | 167 60 | |
| 63066—Drain, cocks, keys, etc. | 15 32 | |
| | | $2,713 62 |

Canadian Bronze, Ltd., Toronto.

| | |
|---|---|
| 57417—Castings | $427 58 |
| 57419— " | 817 01 |
| 57386—Brass castings and bearings | 1,661 41 |
| 58302—Castings and journal bearings | 1,496 07 |
| 58867— " liners, bearings, etc. | 1,649 68 |
| 59042— " | 1,210 00 |

CANADIAN BRONZE, LTD., TORONTO.—*Continued.*

| | | |
|---|---|---|
| 60517—Castings, bearings, etc. | 2,650 77 | |
| 61125— " | 40 75 | |
| 61942—Valves, liners, brasses, etc. | 104 12 | |
| 63100—Castings, liners, brasses, etc. | 1,882 38 | |
| | | $11,939 77 |

COCHRANE HARDWARE, LTD., NORTH BAY, ONT.

| | | |
|---|---|---|
| 57443—Hardware | $171 47 | |
| 57394— " and blankets | 165 56 | |
| 57845— " | 79 08 | |
| 58298— " snowshoes, crayons, paper | 75 74 | |
| 58925—Dynamite, twine, etc. | 165 17 | |
| 59036— " blankets | 451 21 | |
| 60573— " stock patterns, etc. | 608 59 | |
| 60304—Alabastine, discs | 13 50 | |
| 60700—Dynamite, padlocks, keys, etc. | 379 21 | |
| 61010—Caps, scythes, stones, etc. | 154 17 | |
| 61011—Traps, dynamite, pails, etc. | 92 06 | |
| 61137—Tees, elbows, etc. | 8 84 | |
| 61571—Crayons, etc. | 10 75 | |
| 61951—Tea pot, knives, forks, etc. | 24 56 | |
| 61476—Surprise paper, sulphite, etc. | 136 58 | |
| 61584—Locks, dynamite, etc. | 110 01 | |
| 61726—Screen windows, doors, etc. | 162 44 | |
| 61940—Dynamite, roofing | 341 48 | |
| 62721—Hardware | 346 61 | |
| 62372—Overpayment of deposit on contract | 8 50 | |
| 62764—Sinks, taps, etc. | 74 73 | |
| 62832—Quebec heater, etc. | 41 50 | |
| 63046—Galv. ventilators | 50 00 | |
| 63268—Quebec heater, stove pipe | 60 70 | |
| 63674—Claim No. 12719, loss glass and hardware | 37 52 | |
| | | $3,769 98 |

CANADIAN INDEPENDENT TELEPHONE ASSOCIATION, TORONTO.

| | | |
|---|---|---|
| 56530—Donation | $5 90 | |
| 57541—Membership fee | 5 00 | |
| | | $10 90 |

W. H. COX COAL CO., LTD., TORONTO.

| | | |
|---|---|---|
| 56620—Coal | $578 71 | |
| 57553— " | 552 47 | |
| 57720— " | 402 73 | |
| 58617— " | 110 50 | |
| 59134— " | 109 54 | |
| 60575— " | 122 18 | |
| | | $1,876 13 |

COPELAND-CHATTERSON CO., LTD., TORONTO.

| | | |
|---|---|---|
| 56658—Ledger binders and index | $36 25 | |
| 57136—Binder, leaves and index | 36 81 | |
| 57832—Self locking binder | 2 50 | |
| | | $75 56 |

COCHRANE TELEPHONE CO., LTD., COCHRANE, ONT.

| | | |
|---|---|---|
| 56720—Rental of telephone | $15 00 | |
| 59735— " " | 15 00 | |
| 60391— " " | 35 00 | |
| 60897— " " | 17 50 | |
| | | $82 50 |

CENTRAL VERMONT RAILWAY, ST. ALBANS, VT.

| | | |
|---|---|---|
| 56846—Car service balance | $40 50 | |
| 58169— " " " | 49 95 | |
| 58080— " " " | 31 05 | |
| 59231— " " " | 21 15 | |
| 59473— " repairs | 2 40 | |
| 59495— " " | 1 38 | |
| 59556— " service balance | 25 20 | |
| 59732—Ticket balance | 1 70 | |
| 59905—Car repairs | 6 33 | |
| 60155—Car service balance | 2 25 | |
| 60044— " repairs | 72 | |
| 60436— " service balance | 9 00 | |
| 61279— " repairs | 4 63 | |
| 61693— " service balance | 14 85 | |
| 62014— " repairs | 1 19 | |
| 62106— " service balance | 13 05 | |
| 62809— " " " | 30 60 | |
| 63428— " " " | 15 75 | |
| 63838— " repairs | 27 | |
| | | $271 97 |

CHARLESTON & WESTERN CAROLINA RAILWAY, WILMINGTON, N.C.

| | | |
|---|---|---|
| 56848—Car service balance | $6 75 | |
| 59241— " " " | 3 60 | |
| 59566— " " " | 4 50 | |
| 60167— " " " | 90 | |
| 60448— " " " | 3 60 | |
| | | $19 35 |

CHICAGO, INDIANAPOLIS & LOUISVILLE RAILWAY, CHICAGO, ILL.

| | | |
|---|---|---|
| 56850—Car service balance | $7 65 | |
| 57278—Car repairs | 20 | |
| 58094—Car service balance | 22 05 | |
| 59245—Car service balance | 10 80 | |
| 59491—Car repairs | 1 97 | |
| 59570—Car service balance | 31 50 | |
| 60171— " " | 31 95 | |
| 61703— " " | 20 25 | |
| 62116— " " | 22 95 | |
| 62465—Car repairs | 48 | |
| 62823—Car service balance | 45 | |
| 63434— " " | 15 75 | |
| 63596—Car repairs | 1 94 | |
| | | $167 94 |

CENTRAL NEW ENGLAND RAILWAY, NEW HAVEN, CONN.

| | | |
|---|---|---|
| 56852—Car service balance | $0 45 | |
| 58096— " " | 4 05 | |
| 59247— " " | 13 95 | |
| 59572— " " | 5 85 | |
| 60173— " " | 2 70 | |
| 61271—Car repairs | 51 | |
| 61705—Car service balance | 15 30 | |
| 62118— " " | 3 60 | |
| 62825— " " | 1 35 | |
| 63738—Car repairs | 34 | |
| | | $48 10 |

R. CROGHAN, M.P. DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 57030—Expenses—travelling | $14 00 | |
| | | $14 00 |

A. R. Clarke & Co., Limited, Toronto, Ont.

| | | |
|---|---|---|
| 57050—Claim No. 10563—damage to trunk | $2 50 | |
| | | $2 50 |

John H. Cole, Matheson, Ont.

| | | |
|---|---|---|
| 57052—Claim No. 9187—shortage tobacco | $50 61 | |
| | | $50 61 |

Central Indiana Railway Company, Anderson, Ind.

| | | |
|---|---|---|
| 57276—Car repairs | $0 20 | |
| 62124—Car service balance | 5 40 | |
| | | $5 60 |

Chicago, St. Paul, Minneapolis & Omaha Railway Company, St. Paul, Minn.

| | | |
|---|---|---|
| 57280—Car repairs | $17 15 | |
| 58092—Car service balance | 8 55 | |
| 58795—Car repairs | 1 15 | |
| 59493—Car repairs | 83 | |
| 60165—Car service balance | 12 40 | |
| 59950—Car repairs | 6 98 | |
| 60446—Car service balance | 9 40 | |
| 60466—Car repairs | 5 95 | |
| 61275— " | 4 24 | |
| 61848— " | 3 75 | |
| 62016— " | 3 68 | |
| 62819—Car service balance | 33 70 | |
| 63432—Car service balance | 10 80 | |
| 63846—Car repairs | 6 38 | |
| | | $124 96 |

The Central Railroad Company of New Jersey, New York, N.Y.

| | | |
|---|---|---|
| 57282—Car repairs | $2 13 | |
| 58163—Car service balance | 1 35 | |
| 58068— " " | 50 40 | |
| 59221— " " | 64 35 | |
| 59256—Car repairs | 12 10 | |
| 59901—Car repairs | 18 56 | |
| 60143—Car service balance | 50 40 | |
| 60040—Car repairs | 1 47 | |
| 60426—Car service balance | 20 25 | |
| 61094—Car repairs | 4 05 | |
| 62012—Car repairs | 8 92 | |
| 62096—Car service balance | 4 05 | |
| 63420—Car service balance | 33 75 | |
| | | $271 78 |

Cleveland Copper Ferrule Co., Cleveland, O.

| | | |
|---|---|---|
| 57360—Copper ferrules | $27 57 | |
| 57821— " | 22 98 | |
| 57954— " | 33 13 | |
| 58553— " | 91 65 | |
| 59737— " | 183 05 | |
| 61605—Exchange on cheques | 1 29 | |
| | | $359 67 |

Central Railway Signal Company, Iberville, Que.

| | | |
|---|---|---|
| 57362—Fusees | $68 00 | |
| 57646—Fusees and torpedoes | 370 93 | |
| 58557—Torpedoes | 208 25 | |
| 58656—Torpedoes and fusees | 580 65 | |
| 68868—Torpedoes | 22 05 | |
| 62842—Torpedoes | 67 50 | |
| 63059—Fusees, torpedoes | 344 00 | |
| | | $1,661 38 |

CANADIAN STEEL FOUNDRIES, LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57364—Tower locks, clevises and pins | $52 30 | |
| 57799—Couplers and knuckle pins | 52 50 | |
| 58294—Couplers and knuckle lock blocks, etc. | 575 68 | |
| 58915—Couplers and knuckle pins | 592 50 | |
| 58980—Couplers and switch tongues | 159 00 | |
| 60507—Switch points, clamp frogs | 628 00 | |
| 60698—Couplers, knuckles | 692 75 | |
| 60874—Breckett teeth | 55 40 | |
| 61131—Coupler, clevises, etc. | 174 60 | |
| 61909—Express on patterns | 90 | |
| 61574—Switch points | 730 00 | |
| 61672—Coupler, knuckles | 101 25 | |
| 62973—Couplers, steel corners, etc. | 215 74 | |
| 62830—Hub liners and couplers | 47 71 | |
| | | $4,078 33 |

CANADIAN GOLD CAR HEATING & LIGHTING CO., LTD., MONTREAL, P.Q.

| | | |
|---|---|---|
| 57368—Diaphragms | $6 60 | |
| 57823— " | 13 86 | |
| 58875— " | 32 01 | |
| 62453—Tee traps, trap seats, etc. | 64 24 | |
| 62822—Tee trap bodies, etc. | 99 00 | |
| | | $215 71 |

CANADIAN EXPLOSIVES, LIMITED, OTTAWA, ONT.

| | | |
|---|---|---|
| 57374—Safety fuse | $12 00 | |
| 58990—Pinions | 3 08 | |
| 60499—Blasting caps | 299 81 | |
| | | $314 89 |

CANADIAN ALLIS-CHALMERS, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57382—Elbows | $36 26 | |
| 57831—Castings, fittings and pipes | 825 55 | |
| 58887—Claim No. 10625—overcharge rate shot | 1 44 | |
| 61899—Valves, rods, rings | 46 57 | |
| 62359—Structural steel | 2,612 85 | |
| | | $3,522 67 |

CANADA MACHINERY CORPORATION, LIMITED, GALT, ONT.

| | | |
|---|---|---|
| 57388—Shearing machine | $1,227 00 | |
| | | $1,227 00 |

THE CARBORUNDUM COMPANY, NIAGARA FALLS, ONT.

| | | |
|---|---|---|
| 57384—Alox wheels | $13 25 | |
| 60890—Alox wheels | 6 63 | |
| 61005—Emery wheels | 18 55 | |
| 61680—Carbo wheels | 3 33 | |
| | | $41 76 |

CHICAGO CAR HEATING COMPANY, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57392—Stove | $22 00 | |
| 58801—Steam hose gaskets | 12 50 | |
| 62816—Steam hose gaskets | 25 00 | |
| | | $59 50 |

CANADIAN ASBESTOS COMPANY, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57406—Gaskets | $6 70 | |
| 57819—Millboard | 40 43 | |
| 57841—Covering | 21 37 | |
| 58869—Asbestos, etc. | 14 12 | |

CANADIAN ASBESTOS COMPANY, MONTREAL, P.Q.—*Continued.*

| | | |
|---|---|---|
| 68984—Asbestos, wick, waste | 28 25 | |
| 59080—Asbestos | 3 01 | |
| 60706—Magnesia blocks | 18 75 | |
| 60932—Lagging | 75 17 | |
| 61123—Air cell | 23 40 | |
| 62826—Asbestos air cell covering | 31 35 | |
| 63044—Asbestos air cell covering | 12 15 | |
| | | $274 70 |

CORPORATION OF THE TOWN OF HAILEYBURY, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 57531—Water rates | $17 00 | |
| 58908— " | 17 00 | |
| 62512— " | 20 40 | |
| 60899— " | 20 40 | |
| | | $74 80 |

F. CADE, M.P. DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 57571—Expenses—travelling | $2 40 | |
| | | $2 40 |

CANADA FURNITURE MANUFACTURERS, LIMITED, WOODSTOCK, ONT.

| | | |
|---|---|---|
| 57589—Cabinet and guides | $12 59 | |
| 57638—Cards | 11 51 | |
| | | $24 10 |

CANADIAN EDGE TOOL COMPANY, GALT, ONT.

| | | |
|---|---|---|
| 57675—Bench axes | $8 73 | |
| 59965—Axes | 29 11 | |
| | | $37 84 |

COBALT WATER COMMISSION, COBALT, ONT.

| | | |
|---|---|---|
| 57699—Water supplied—locomotives | $2 02 | |
| 57898— " " | 2 37 | |
| 59161— " " | 2 03 | |
| 59563— " " | 9 19 | |
| | | $15 61 |

THE CANADIAN FORESTRY ASSOCIATION, OTTAWA, ONT.

| | | |
|---|---|---|
| 57795—Subscriptions, *Canadian Forestry Journal* | $3 00 | |
| 61336— " " " " | 1 00 | |
| 61938— " " " " | 8 00 | |
| | | $12 00 |

L. C. CHASE & COMPANY, BOSTON, MASS.

| | | |
|---|---|---|
| 57797—Plush | $17 99 | |
| 58923—Frieze | 311 08 | |
| | | $329 07 |

CANADA IRON FOUNDRIES, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 57807—Castings | $15 48 | |
| 62701—Grates | 5 40 | |
| 62434—Grate castings | 21 17 | |
| | | $42 05 |

CANADIAN NATIONAL CARBON COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57811—Columbia regular cells | $31 25 | |
| | | $31 25 |

E. R. Caldwell & Company, Bradford, Pa.

| | | |
|---|---|---|
| 57815—Pump bodies | $13 00 | |
| | | $13 00 |

Consolidated Car-Heating Company, Albany, N.Y.

| | | |
|---|---|---|
| 57835—Diaphragms | $13 20 | |
| 57690—Gaskets | 33 00 | |
| 58312— " | 66 00 | |
| 58803— " | 33 00 | |
| 62814— " | 108 90 | |
| | | $254 10 |

Chicago Bridge & Iron Works, Chicago, Ill.

| | | |
|---|---|---|
| 57955—Steel tower and tank | $847 30 | |
| | | $847 30 |

Claybelt Printing & Publishing Co., Limited, Cochrane, Ont.

| | | |
|---|---|---|
| 58019—Claim No. 10573—damage to printing press | $5 00 | |
| 60209—Advertising | 4 30 | |
| 62374— " | 8 40 | |
| 62706— " | 21 30 | |
| | | $39 00 |

Campbell & Deyell, Limited, Cobalt, Ont.

| | | |
|---|---|---|
| 58021—Claim No. 8959—overcharge weight silver ore | $157 75 | |
| 63183—Claim No. 11620—overcharge rate silver ore | 28 36 | |
| | | $186 11 |

Carolina, Clinchfield & Ohio Railway, Johnston City, Tenn.

| | | |
|---|---|---|
| 58173—Car service balance | $15 30 | |
| 58088— " " | 5 40 | |
| 62815— " " | 4 05 | |
| | | $24 75 |

Colorado & Southern Railway Co., Denver, Col.

| | | |
|---|---|---|
| 58175—Car service balance | $3 15 | |
| 58407—Car repairs | 5 29 | |
| 59243—Car service balance | 5 85 | |
| 59568— " " | 9 25 | |
| 60169— " " | 6 75 | |
| 61701— " " | 7 65 | |
| 61092—Car repairs | 2 89 | |
| 62114—Car service balance | 17 55 | |
| 62821— " " | 13 05 | |
| | | $71 43 |

Chicago, New York & Boston Refrigerator Co., Chicago, Ill.

| | | |
|---|---|---|
| 58179—Car service balance | $3 79 | |
| 58114— " " | 1 93 | |
| 59255— " " | 1 93 | |
| 59582— " " | 3 87 | |
| 60183— " " | 1 90 | |
| 60454— " " | 86 | |
| 61709— " " | 1 03 | |
| 62829— " " | 1 90 | |
| 63440— " " | 1 90 | |
| | | $19 11 |

Canadian Brotherhood of Railroad Employees, Halifax, N.S.

| | | |
|---|---|---|
| 57688—Advertising, *Canadian Railroad Employees' Monthly* | $10 00 | |
| | | $10 00 |

COCHRANE SHEET METAL & CORNISH WORKS, COCHRANE, ONT.

| | | |
|---|---|---|
| 57834—Repairs to heating system | $12 60 | |
| | | $12 60 |

DR. D. R. CAMERON, COCHRANE, ONT.

| | | |
|---|---|---|
| 57860—Professional service rendered | $10 00 | |
| | | $10 00 |

WM. COMRIE, EXTRA GANG FOREMAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57968—Travelling expenses | $3 70 | |
| | | $3 70 |

FRANK A. CHILD, COCHRANE, ONT.

| | | |
|---|---|---|
| 57984—Claim No. 10651—loss account, damage to stove | $3 70 | |
| | | $3 70 |

CHICAGO, PEORIA & ST. LOUIS RAILROAD COMPANY, SPRINGFIELD, ILL.

| | | |
|---|---|---|
| 58064—Car service balance | $0 45 | |
| 59217— " " | 2 25 | |
| 59544— " " | 5 40 | |
| 61962—Car repairs | 28 | |
| | | $8 38 |

COTTON BELT ROUTE, TYLER, TEX.

| | | |
|---|---|---|
| 58112—Car service balance | $3 60 | |
| 59253— " " | 17 10 | |
| 59580— " " | 17 55 | |
| 60181— " " | 20 25 | |
| 60452— " " | 12 15 | |
| 61707— " " | 90 | |
| 62122— " " | 15 75 | |
| 62827— " " | 16 65 | |
| 63438— " " | 2 70 | |
| | | $106 65 |

CENTRAL WEST VIRGINIA & SOUTHERN RAILROAD COMPANY, HENDRICKS, W. VA.

| | | |
|---|---|---|
| 58166—Car service balance | $0 45 | |
| 59257— " " | 4 05 | |
| | | $4 50 |

CANADIAN DETROIT LUBRICATOR COMPANY, LIMITED, WALKERVILLE, ONT.

| | | |
|---|---|---|
| 58306—Lubricator and filing plugs | $82 90 | |
| 59054—Lubricator parts | 18 20 | |
| 62723—Packing, glasses | 7 92 | |
| | | $109 02 |

THE CANADIAN BAG COMPANY, LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 58308—Seamless bags | $104 00 | |
| | | $104 00 |

THE CURTAIN SUPPLY COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 58310—Webbing and gimp | $5 25 | |
| 58807—Curtains | 54 12 | |
| 61686—Tin rollers | 7 12 | |
| | | $66 49 |

COLUMBIA GRAPHOPHONE COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 58330—Dictaphone cylinders | $10 00 | |
| | | $10 00 |

R. W. Copps, Timmins, Ont.

| | | |
|---|---|---|
| 58596—Livery service | $3 00 | |
| | | $3 00 |

W. Connelly, Elk Lake P.O.

| | | |
|---|---|---|
| 58593—Ties | $73 80 | |
| 61063—Ties | 42 90 | |
| | | $116 70 |

T. Campbell, Car Repairer, North Bay, Ont.

| | | |
|---|---|---|
| 58635—Travelling expenses | $2 15 | |
| | | $2 15 |

Crouse-Hinds Company of Canada, Limited, Toronto, Ontario.

| | | |
|---|---|---|
| 58749—Galvanized condulets, covers and reducers | $17 80 | |
| 58704—Condulet | 2 03 | |
| 59963— " covers, etc. | 58 91 | |
| 61057— " | 2 03 | |
| 61578— " side plate, etc. | 13 42 | |
| | | $94 19 |

Canadian Pulp and Lumber Company, Limited, Latchford, Ontario.

| | | |
|---|---|---|
| 58967—Claim No. 10701, over-charged rate pulpwood | $20 10 | |
| | | $20 10 |

Henri Cusson, St. Boniface, Man.

| | | |
|---|---|---|
| 59127—Claim No. 11140, baggage destroyed by fire | $100 00 | |
| | | $100 00 |

Wm. Cameron, St. Louis, Mo.

| | | |
|---|---|---|
| 59149—Tariffs | $15 16 | |
| 60217— " | 6 42 | |
| 61559— " | 8 30 | |
| 63153— " | 4 40 | |
| | | $34 28 |

Colin Cross, Wabun P.O.

| | | |
|---|---|---|
| 59425—Ties | $64 97 | |
| 59754— " | 35 80 | |
| | | $100 77 |

S. J. Cherry, North Bay, Ontario.

| | | |
|---|---|---|
| 59571—Plumbing repairs | 5 29 | |
| 62011—Brackets, washers, etc. | 4 48 | |
| 63096—Work performed, general office and freight shed, N. Bay.. | 19 11 | |
| 63590—Material supplied and plumbing done | 140 00 | |
| 63654—Pan for Blue Print Room | 19 80 | |
| | | $188 68 |

Conkey & Murphy, Haileybury, Ontario.

| | | |
|---|---|---|
| 58654—Wood | $78 50 | |
| 63370—Ties | 148 68 | |
| | | $227 18 |

Canada Cement Company, Limited, Montreal, Quebec.

| | | |
|---|---|---|
| 58850—Cement | $284 05 | |
| 59649— " | 1,136 20 | |
| 60983— " | 568 10 | |
| 61576— " | 852 15 | |
| 62217— " | 284 05 | |
| 62357— " | 1,704 30 | |
| | | $4,828 85 |

CHAS. CALEY, NORTH BAY, ONTARIO.

| | | |
|---|---|---|
| 58904—Award W.C.B. settlement *re* alleged injuries received .... | $17 23 | $17 23 |

CANUCK SUPPLY COMPANY, LIMITED, MONTREAL, QUEBEC.

| | | |
|---|---|---|
| 58988—Front end paint .... | $15 40 | $15 40 |

CHICAGO, TERRE HANTE & SOUTH-EASTERN RAILWAY COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 59574—Car service balance .... | 90 | |
| 60175— " " " .... | 90 | |
| 62120— " " " .... | 90 | $2 70 |

J. E. COPLAND, LOCOMOTIVE ENGINEER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 59725—Advance .... | $100 00 | $100 00 |

J. CIPPARONE, M.P. DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 59845—Expenses (travelling) .... | $0 50 | $00 50 |

WM. G. COOK, YELLOWGRASS, SASK.

| | | |
|---|---|---|
| 59873—Claim No. 11539, loss account, baggage destroyed .... | $100 00 | $100 00 |

CHICAGO RAILROAD ASSOCIATION, CHICAGO, ILL.

| | | |
|---|---|---|
| 60081—Joint passenger tariff, No. 270 .... | $2 00 | $2 00 |

CINCINNATI, INDIANAPOLIS AND WESTERN RAILROAD CO., INDIANAPOLIS, IND.

| | | |
|---|---|---|
| 60085—Car repairs .... | $85 00 | |
| 60185— " service balance .... | 7 65 | |
| 60046— " repairs .... | 42 | |
| 61711— " service balance .... | 1 35 | |
| 62126— " " .... | 19 35 | 29 62 |

CAMBRIA AND INDIANA RAILROAD COMPANY, PHILADELPHIA, PA.

| | | |
|---|---|---|
| 60187—Car service balance .... | $4 05 | |
| 60456— " " " .... | 2 70 | $6 75 |

B. CATTLEY, RELIEVING AGENT, NORTH BAY, ONT.

| | | |
|---|---|---|
| 60485—Travelling expenses .... | 22 00 | |
| 60178— " " .... | 15 00 | |
| 63794— " " .... | 6 00 | $43 00 |

CENTRAL ELECTRIC SUPPLY CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 60489—Conduits, elbows and bushings .... | $105 35 | |
| 60884—Battery charging receptacles, etc. .... | 52 70 | $158 05 |

CANADIAN OFFICE AND SCHOOL FURNITURE CO., LIMITED, PRESTON, ONT.

| | | |
|---|---|---|
| 60491—Ticket tubes and hooks .... | $1 37 | $1 37 |

COBALT COMET MINES, LIMITED, GIROUX LAKE P.O., ONT.

| | | |
|---|---|---|
| 59832—Rental grounds, Kerr Lake Station | $18 00 | $18 00 |

W. C. COLES, THORNLOE P.O.

| | | |
|---|---|---|
| 60064—Ties | $15 00 | |
| 60064— " | 16 80 | |
| 62669— " | 42 60 | |
| | | $74 40 |

THE CLEVELAND STONE COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 60148—Grindstone | $7 91 | $7 91 |

CANADIAN H. W. JOHNS MANVILLE COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 60366—Asbestos millboard | $5 53 | |
| 62975—Fire felt | 6 75 | |
| | | $12 28 |

COLORADO MIDLAND RAILWAY COMPANY, DENVER, COL.

| | | |
|---|---|---|
| 60458—Car service balance | $00 45 | $00 45 |

DENIS CAULEY, TIMMINS, ONT.

| | | |
|---|---|---|
| 60392—Wood | $9 88 | $9 88 |

H. V. CARTWRIGHT, MATHESON, ONT.

| | | |
|---|---|---|
| 60880—Groceries | $24 48 | $24 48 |

COCHRANE NORTHLAND POST, LIMITED, COCHRANE, ONT.

| | | |
|---|---|---|
| 60984—Advertising | $7 40 | $7 40 |

COMMONWEALTH STEEL COMPANY, ST. LOUIS, MO.

| | | |
|---|---|---|
| 60981—Wheel trucks | $800 00 | $800 00 |

NOEL CROSLEY, KENABEEK P.O.

| | | |
|---|---|---|
| 61063—Ties | $10 80 | $10 80 |

FRANK CIPPARONE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61553—Award, W. C. B., final payment *re* alleged injuries | $7 35 | $7 35 |

ARTHUR CAMPBELL, L'ORIGNAL, ONT.

| | | |
|---|---|---|
| 61617—Claim No. 10793, overcharge on drilling outfit | $19 32 | $19 32 |

H. JAMES CADWELL, CARTHAGE, N.Y.

| | | |
|---|---|---|
| 61869—Claim No. 11864, overcharge rate pulpwood | $41 76 | $41 76 |

C. Celestine, Labourer, Timmins, Ont.

| | | |
|---|---|---|
| 61270—Award, W. C. B., partial payment *re* alleged injuries.... | $39 05 | |
| 62368— " " " " .... | 37 75 | |
| | | $76 80 |

Canadian Cotton & Wool Waste Company, Montreal, Que.

| | | |
|---|---|---|
| 61508—Cotton wipers ..... | $52 30 | |
| | | $52 30 |

Canadian Consolidated Felt Company, Limited, Kitchener, Ont.

| | | |
|---|---|---|
| 61580—Saddle felt ..... | $28 00 | |
| | | $28 00 |

Chicago, West Pullman & Southern Railroad, Chicago, Ill.

| | | |
|---|---|---|
| 61850—Car repairs ..... | $0 70 | |
| | | $0 70 |

Cleveland & Buffalo Transit Company.

| | | |
|---|---|---|
| 62226—Ticket balance ..... | $0 50 | |
| | | $0 50 |

R. Clarke, Locomotive Foreman, Englehart, Ont.

| | | |
|---|---|---|
| 62455—Travelling expenses ..... | $2 80 | |
| | | $2 80 |

John Clarke, Englehart, Ont.

| | | |
|---|---|---|
| 62583—Claim No. 12043, overcharge rate pulpwood ..... | $43 86 | |
| | | $43 86 |

Samuel Clark, Thornloe P.O.

| | | |
|---|---|---|
| 62669—Ties ..... | $25 80 | |
| 62806— " ..... | 40 00 | |
| | | $65 80 |

Herbert Chapman, McCool P.O.

| | | |
|---|---|---|
| 62669—Ties ..... | $34 93 | |
| | | $34 93 |

Cobalt Miners' Union, Cobalt, Ont.

| | | |
|---|---|---|
| 63149—Commission *re* excursion ..... | $119 55 | |
| | | $119 55 |

J. J. Corbeill, Dane, Ont.

| | | |
|---|---|---|
| 62886—Claim No. 11381, alleged loss sausages ..... | $3 80 | |
| | | $3 80 |

Carnation Support Company, Connersville, Ind.

| | | |
|---|---|---|
| 63056—Carnation supports ..... | $10 00 | |
| | | $10 00 |

Canadian Ingersoll Rand Company, Limited, Montreal, Que.

| | | |
|---|---|---|
| 63196—Claim No. 12545, alleged loss drills ..... | $1,500 00 | |
| | | $1,500 00 |

CANADIAN INSPECTION & TESTING LABORATORIES, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 63266—Inspection steelwork | $10 87 | |
| | | $10 87 |

CHARLTON AGRICULTURAL SOCIETY, BRENTHA, ONT.

| | | |
|---|---|---|
| 63364—Donation as prize for best span of horses | $10 00 | |
| | | $10 00 |

EDWARD CAMPBELL, HEASLIP P.O.

| | | |
|---|---|---|
| 63370—Ties | $38 67 | |
| | | $38 67 |

J. E. CHALIFOUR, OTTAWA, ONT.

| | | |
|---|---|---|
| 63450—Atlas of Canada | $3 00 | |
| | | $3 00 |

E. COOK, NORTH BAY, ONT.

| | | |
|---|---|---|
| 63452—Amt. award, W. C. B., partial payment *re* alleged injuries | $45 12 | |
| | | $45 12 |

ANGUS CAMERON, ENGLEHART, ONT.

| | | |
|---|---|---|
| 63582—Donation, cow alleged killed | $25 00 | |
| | | $25 00 |

A. COCKERLINE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 63810—Donation, account personal effects destroyed by fire | $10 00 | |
| | | $10 00 |

DELAWARE & HUDSON COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56509—Car repairs | $1 33 | |
| 57099— " " | 17 | |
| 56858— " service balance | 9 90 | |
| 58181— " " | 44 55 | |
| 58369— " repairs | 17 30 | |
| 58116— " service balance | 35 10 | |
| 59259— " " | 20 25 | |
| 59584— " " | 35 55 | |
| 59907— " repairs | 2 62 | |
| 60189— " service balance | 68 40 | |
| 61375— " repairs | 1 74 | |
| 61904— " " | 3 02 | |
| 61964— " " | 2 17 | |
| 62128— " service balance | 24 70 | |
| 62831— " " | 14 65 | |
| 63444— " " | 10 95 | |
| 63606— " repairs | 23 08 | |
| | | $315 48 |

DELAWARE, LACKAWANNA & WESTERN RAILROAD COMPANY, NEW YORK, N.Y.

| | |
|---|---|
| 56507—Car repairs | $13 77 |
| 56961— " " | 4 99 |
| 56860—Car service balance | 100 35 |
| 58183— " " | 33 75 |
| 58371— " repairs | 2 00 |
| 58118— " service balance | 110 30 |
| 59261— " " | 89 55 |
| 59501— " repairs | 2 89 |
| 59242— " " | 3 95 |

DELAWARE, LACKAWANNA & WESTERN RAILROAD COMPANY, ETC.—*Continued.*

| | | |
|---|---|---|
| 59586—Car service balance | $123 75 | |
| 60029— " repairs | 19 03 | |
| 60191— " service balance | 84 15 | |
| 60052— " repairs | 35 | |
| 60474— " service balance | 36 90 | |
| 61377— " repairs | 7 83 | |
| 61713— " service balance | 43 20 | |
| 62022— " repairs | 22 89 | |
| 62130— " service balance | 110 70 | |
| 62467— " repairs | 29 | |
| 62833— " service balance | 126 90 | |
| 63446— " " | 44 49 | |
| | | $982 03 |

DULUTH, SOUTH SHORE & ATLANTIC RAILWAY, MARQUETTE, MICH.

| | | |
|---|---|---|
| 56511—Car repairs | $48 49 | |
| 57003— " " | 3 91 | |
| 58185— " service balance | 2 25 | |
| 58120— " " | 1 80 | |
| 59263— " " | 45 | |
| 59403—Ticket balance | 52 17 | |
| 59588—Car service balance | 2 25 | |
| 60193— " " | 1 80 | |
| 60476— " " | 4 50 | |
| 60622—Ticket balance | 11 30 | |
| 61281—Car repairs | 6 02 | |
| 61717— " service balance | 10 80 | |
| 61966— " repairs | 5 83 | |
| 63752— " " | 6 56 | |
| | | $158 13 |

MISS B. F. DURHAM, STENOGRAPHER, TORONTO.

| | | |
|---|---|---|
| 56633—Services rendered | $15 00 | |
| 56691— " " | 15 00 | |
| 56532— " " | 15 00 | |
| 56604— " " | 15 00 | |
| 56572— " " | 15 00 | |
| 56500— " " | 15 00 | |
| 56520— " " | 15 00 | |
| 57465— " " | 15 00 | |
| 57467— " " | 15 00 | |
| 57487— " " | 15 00 | |
| 57543— " " | 15 00 | |
| | | $165 00 |

DOMINION GLASS COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 56699—Globes | $6 96 | |
| 56893—Chimneys | 14 41 | |
| 56580—Globes | 7 06 | |
| 57499—Chimneys | 13 23 | |
| 57677— " | 12 35 | |
| 57796— " | 6 17 | |
| 58559— " | 9 11 | |
| 58751— " and globes | 54 10 | |
| 58870—Globes | 2 67 | |
| 60130— " | 28 51 | |
| 61486—B. climps | 7 20 | |
| | | $161 77 |

DUNLOP TIRE & RUBBER GOODS COMPANY LIMITED, TORONTO.

| | | |
|---|---|---|
| 56701—Steam hose bags | $87 58 | |
| 56652—Air hose bags | 75 95 | |

DUNLOP TIRE & RUBBER GOODS COMPANY, LIMITED, TORONTO.—*Continued.*

| | | | |
|---|---|---|---|
| 57497—Hose | | | |
| 57652— " and couplings | | | |
| 59671— " | | | |
| 60126— " and couplings | | | |
| 61015— " " " | | | |
| 62369— " " " | | | |
| 62856— " " " | | | |
| | | | $432 65 |

DOUGALL VARNISH CO., LIMITED, MONTREAL, QUE.

| | | | |
|---|---|---|---|
| 56831—Varnish | | $93 10 | |
| 56666— " | | 53 90 | |
| 57495— " | | 44 10 | |
| 57595— " | | 78 40 | |
| 57794— " | | 98 00 | |
| 58695— " | | 68 60 | |
| 58760— " | | 98 00 | |
| 60110— " | | 29 40 | |
| 60128— " | | 98 00 | |
| 61059—Rubbing | | 58 80 | |
| 61586—Varnish | | 68 60 | |
| 62363— " | | 68 60 | |
| 62766— " | | 137 20 | |
| | | | $994 70 |

JOS. DAJENAIS, CONNAUGHT, ONT.

| | | | |
|---|---|---|---|
| 56837—Donation, account colt alleged killed | | $30 00 | |
| | | | $30 00 |

DOMINION EXPRESS COMPANY, NORTH BAY, ONT.

| | | | |
|---|---|---|---|
| 56839—Express charges | | $26 06 | |
| 56764— " " | | 45 36 | |
| 57568— " " | | 25 93 | |
| 58439— " " | | 39 81 | |
| 58536— " " | | 49 80 | |
| 59577— " " | | 24 35 | |
| 60393— " " | | 37 74 | |
| 60767— " " | | 27 81 | |
| 60646— " " | | 26 23 | |
| 62013— " " | | 32 11 | |
| 61156—Refund telephone rental, Timmins | | 5 10 | |
| 62256—Express charges | | 27 25 | |
| 62977— " " | | 25 79 | |
| 63854— " " | | 27 03 | |
| | | | $420 37 |

J. J. DOUGLASS, ROAD FOREMAN, NORTH BAY, ONT.

| | | | |
|---|---|---|---|
| 56867—Travelling expenses | | $21 75 | |
| 56740— " " | | 22 25 | |
| 57868— " " | | 14 75 | |
| 58679— " " | | 29 75 | |
| 58780— " " | | 14 00 | |
| 59701— " " | | 20 60 | |
| 60648— " " | | 22 70 | |
| 61573— " " | | 22 00 | |
| 61238— " " | | 16 90 | |
| 62333— " " | | 58 30 | |
| 63382— " " | | 73 60 | |
| | | | $316 60 |

J. DRINKWATER, SUPERVISOR, COCHRANE, ONT.

| | | | |
|---|---|---|---|
| 56869—Travelling expenses | | $5 45 | |
| 56738— " " | | 7 15 | |

J. DRINKWATER, SUPERVISOR, COCHRANE, ONT.—*Continued.*

| | | |
|---|---|---|
| 57665—Travelling expenses | $14 75 | |
| 57710— " " | 24 45 | |
| 57870— " " | 14 85 | |
| 58677— " " | 7 20 | |
| 59328— " " | 7 30 | |
| 59849— " " | 8 80 | |
| 60288— " " | 9 85 | |
| 61523— " " | 5 60 | |
| 61240— " " | 7 75 | |
| 62259— " " | 7 55 | |
| 62480— " " | 2 75 | |
| | | $123 45 |

H. A. DUDLEY, RELIEVING OPERATOR, TOMIKO, ONT.

| | | |
|---|---|---|
| 56871—Travelling expenses | $14 00 | |
| 59858— " " | 14 00 | |
| | | $28 00 |

THE DENVER & RIO GRANDE RAILROAD COMPANY, DENVER, COLO.

| | | |
|---|---|---|
| 56963—Car repairs | $1 00 | |
| 56862—Car service balance | 2 25 | |
| 58124— " " " | 9 00 | |
| 59267— " " " | 2 25 | |
| 59592— " " " | 90 | |
| 60195— " " " | 11 70 | |
| 60478— " " " | 17 55 | |
| 61721— " " " | 18 45 | |
| 63462— " " " | 90 | |
| | | $64 00 |

DEPT. MILITIA & DEFENCE, OTTAWA, ONT.

| | | |
|---|---|---|
| 57021—Overcharge freight | $27 58 | |
| 56766— " " | 1 00 | |
| | | $28 58 |

H. DAY, WATER SERVICE INSPECTOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57059—Travelling expenses | $12 50 | |
| 56742— " " | 15 75 | |
| 57623— " " | 15 80 | |
| 57866— " " | 14 30 | |
| 58597— " " | 12 30 | |
| 59326— " " | 12 25 | |
| 59847— " " | 14 65 | |
| 60264— " " | 12 50 | |
| 61521— " " | 12 70 | |
| 61234— " " | 17 00 | |
| 62263— " " | 16 90 | |
| 62820— " " | 9 65 | |
| | | $166 30 |

DELANY & PETTIT, LIMITED, TORONTO.

| | | |
|---|---|---|
| 57201—Glue | $14 00 | |
| 57424—Flint Paper | 24 41 | |
| 57889— " " | 3 54 | |
| 58815— " " etc. | 49 64 | |
| 59066— " " and glue | 52 82 | |
| 60724—Glue | 15 68 | |
| 63113—Emery cloth, flint paper | 50 60 | |
| 63108—Paper | 5 88 | |
| | | $216 57 |

HENRY DISSTON & SONS, LIMITED, TORONTO.

| | | |
|---|---|---|
| 57203—Hacksaw blades | $8 60 | |
| 57420—Bandsaws | 42 24 | |
| 57863— " | 2 67 | |
| 58338—Hacksaws | 9 62 | |
| 59037— " blades | 4 22 | |
| 59062— " | 13 50 | |
| 60525—Sawblades | 7 76 | |
| 61690—Hand hacks | 10 28 | |
| 62729—Files | 19 12 | |
| 62924—Hacksaws | 18 90 | |
| 63104—Bandsaws, files | 20 81 | |
| | | $157 72 |

G. W. DUNCAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57205—Groceries | $57 90 | |
| 57418—Vegetables and eggs | 15 15 | |
| 57849—Potatoes | 4 50 | |
| 58344—Butter, eggs, onions and potatoes | 32 95 | |
| 59068—Potatoes, onions, etc. | 45 30 | |
| 60535—Onions, eggs, etc. | 107 20 | |
| 59870—Claims No. 10976 and 10975—loss fruit | 35 96 | |
| 60306—Eggs, potatoes, butter | 43 80 | |
| 60718—Eggs, onions, butter | 83 73 | |
| 60892—Cabbage | 2 00 | |
| 61203—Eggs | 28 65 | |
| 61905—Butter, eggs, etc. | 93 79 | |
| 61514—Groceries, eggs | 26 80 | |
| 61786— " | 333 75 | |
| 61944—Butter | 14 56 | |
| 62745—Claim No. 12708—loss and damage fruit | 37 74 | |
| 62989—Butter, potatoes, onions | 223 81 | |
| 62860—Groceries | 187 51 | |
| 62890—Claim No. 11638—loss oranges | 3 96 | |
| 63068—Butter, eggs, potatoes | 48 70 | |
| | | $1,427 76 |

DODGE MANUFACTURING CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 57207—Wood pulley | 12 04 | |
| 57414—Hanger bearings | 2 87 | |
| | | $14 91 |

DOMINION PRINTING & LOOSE LEAF CO., LIMITED, OTTAWA, ONT.

| | | |
|---|---|---|
| 57209—Tariff binders | $19 80 | |
| 57430—Fyles and indexes | 13 72 | |
| 58340—Fyles and indexes | 18 90 | |
| 57857—Tariff fyles | 19 80 | |
| 59058— " " | 26 62 | |
| 60788— " " | 37 42 | |
| 61490—Tariff binders | 19 80 | |
| 62735—Fyles and indexes | 66 60 | |
| 62846—Fyles | 16 20 | |
| | | $238 86 |

DOMINION ENVELOPE CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57211—Envelopes | $31 97 | |
| 57861— " | 40 75 | |
| 58336— " | 6 75 | |
| 59035— " | 35 75 | |
| 60527— " | 36 50 | |
| 61484— " | 66 88 | |
| 62731— " | 28 80 | |
| 62854— " | 7 00 | |
| | | $254 40 |

DOMINION STEEL FOUNDRY CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 57213—Steel castings | $16 97 | |
| 57412—Express on patterns | 55 | |
| 57851—Castings and freight on patterns | 66 88 | |
| 58334—Castings | 15 67 | |
| 58817—Express on patterns | 85 | |
| 59074—Handrails, castings, etc. | 36 06 | |
| 60716—Handrail, express charges | 4 40 | |
| 60936—Iron, express charges | 2 53 | |
| 61488—Coupler, swivel, etc. | 9 48 | |
| 61516— " | 9 89 | |
| 63115—Freight charges on pattern | 60 | |
| 62632—Swivel joints, etc. | 52 60 | |
| 62852—Casting | 44 78 | |
| | | $261 26 |

DOMINION REDUCTION CO., LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 57345—Claim No. 9402—overcharge in rate on silver ore | $49 48 | |
| | | $49 48 |

DOMINION WHEEL & FOUNDRIES, LIMITED, TORONTO.

| | | |
|---|---|---|
| 57421—Castings | $655 53 | |
| 57410—Castings, wheels, etc. | 232 78 | |
| 57701—Castings, wheels, grates | 1,549 28 | |
| 58350—Castings, wheels, grates | 2,145 24 | |
| 59091—Truck wheels, castings, etc. | 2,248 43 | |
| 59072—Wheels, castings | 3,379 85 | |
| 60219—Wheels, castings, etc. | 4,768 97 | |
| 60728—Castings, grates, etc. | 3,318 51 | |
| 61205—Castings | 243 85 | |
| 61911—Castings and express | 1 99 | |
| 61626—Grate bars, hangers, etc. | 80 23 | |
| 61946—Wheels | 86 52 | |
| 52979—Wheels and springs, etc. | 312 24 | |
| 62864—Supplies | 2,646 41 | |
| 63070—Wheels, etc. | 3,162 90 | |
| 63274—Wheels, etc. | 2,886 80 | |
| | | $27,719 53 |

FRANK W. DUNCAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56546—Uniforms | $583 00 | |
| 57859—Uniforms | 21 00 | |
| | | $604 00 |

W. J. DAMP, BOILERMAKER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56558—Travelling expenses | $7 95 | |
| 56744— " | 3 40 | |
| 57621— " | 6 10 | |
| 57728— " | 9 85 | |
| 58639— " | 5 75 | |
| 58798— " | 3 05 | |
| 59829— " | 4 45 | |
| 62617— " | 3 85 | |
| 63326— " | 2 35 | |
| | | $46 75 |

DAVIDSON, WAINWRIGHT, ALEXANDER & ELDER, MONTREAL, QUE.

| | | |
|---|---|---|
| 56568—Services—legal | $3 00 | |
| | | $3 00 |

DESPATCH & TRIBUNE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56768—Advertising and forms | $11 60 | |
| 57180—Advertising and printing | 35 00 | |

DESPATCH & TRIBUNE, NORTH BAY, ONT.—*Continued.*

| | | |
|---|---|---|
| 57855—Forms | 11 00 | |
| 59167—Forms | 5 50 | |
| 63376—Advertising | 21 60 | |
| 63656—Advertising | 12 40 | |
| | | $97 10 |

DOMINION OF CANADA GUARANTEE & ACCIDENT COMPANY, TORONTO.

| | | |
|---|---|---|
| 56944—Ticket balance | $2 48 | |
| 58313— " | 1 04 | |
| 58252— " | 55 | |
| 59405— " | 1 51 | |
| 59734— " | 83 | |
| 60375— " | 3 58 | |
| 60624— " | 1 24 | |
| 61837— " | 2 34 | |
| 62230— " | 1 65 | |
| 62953— " | 28 | |
| 63572— " | 41 | |
| | | $15 91 |

THE DOMINION RADIATOR COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57018—Grates | $43 95 | |
| 58662— " | 16 26 | |
| 62365— " | 4 66 | |
| | | $64 87 |

A. DORSCHNER, BRAKEMAN, TIMMINS, ONT.

| | | |
|---|---|---|
| 57022—Award W. C. B., *re* alleged injuries | $90 30 | |
| | | $90 30 |

DRUMMOND, MCCALL & CO., LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57038—Claim No. 10333—Overcharge rate, steel plates | $1 94 | |
| 57422—Seamless tube | 22 41 | |
| 57847—Boiler tubes | 165 00 | |
| 58348—Seamless steel tube | 13 65 | |
| 58819—Steel tubes | 107 19 | |
| 59060—Steel tubes | 76 19 | |
| 60537—Steel tubes, tires, etc. | 3,419 30 | |
| 60720—Tubes | 15 40 | |
| 60894—Tubing | 27 61 | |
| 62059—Claim No. 12320—Refund demurrage | 1 00 | |
| 61692—Boiler tubes | 371 70 | |
| 62733—Tubing | 55 59 | |
| 62850— " | 125 75 | |
| 63106— " | 12 53 | |
| | | $4,415 26 |

R. D. DEVLIN, COBALT, ONT.

| | | |
|---|---|---|
| 57054—Claim No. 10516—loss hair tonic | $3 33 | |
| | | $3 33 |

DOME MINES COMPANY, LIMITED, SOUTH PORCUPINE, ONT.

| | |
|---|---|
| 57056—Claim No. 10628—siding rebate | $182 00 |
| 58025— " Nos. 10175 and 10421—overcharge in weight and damage to mufflers | 22 21 |
| 57986—Claims Nos. 10828, 10827, 10222, 10765—siding rebate, etc. | 366 00 |
| 58697—Soft coal | 521 68 |
| 57347—Claims Nos. 10509 and 10346—siding rebate, etc. | 116 98 |
| 57637—Soft coal | 94 57 |
| 58889—Claim No. 10959—siding rebate | 154 00 |
| 59015— " No. 10724—damage to tube mill | 2 29 |

DOME MINES COMPANY, LIMITED, ETC.—*Continued.*

| | | |
|---|---|---|
| 59136—Coal | $32 81 | |
| 59504—Claim No. 11168—siding rebate | 138 00 | |
| 59866— " No. 11656— " | 168 00 | |
| 60913— " No. 11808— " | 152 00 | |
| 61477— " No. 12006— " | 118 00 | |
| 62057— " No. 12319— " | 82 00 | |
| 63189—Claims Nos. 11844 and 12804—siding rebate, etc | 126 48 | |
| 62556—Claim No. 12850—siding rebate | 120 00 | |
| 63170— " No. 12162—damage to castings | 261 89 | |
| | | $2,658 91 |

DOME LAKE MINING & MILLING COMPANY, LIMITED, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 57064—Claim No. 10251—overcharge gold ore | $53 25 | |
| 59502— " No. 10250— " " | 214 71 | |
| 59797— " No. 10457— " " | 76 49 | |
| 59868— " No. 10512— " " | 65 93 | |
| 60911— " No. 10649— " " | 89 13 | |
| 62892— " No. 10252— " " | 163 95 | |
| | | $663 46 |

DES MOINES UNION RAILWAY COMPANY, DES MOINES, IOWA.

| | | |
|---|---|---|
| 57292—Car repairs | $1 48 | |
| | | $1 48 |

DETROIT, TOLEDO & IRONTON RAILROAD COMPANY, DETROIT, MICH.

| | | |
|---|---|---|
| 57294—Car repairs | $1 44 | |
| 58187— " service balance | 4 50 | |
| 58122— " " | 21 15 | |
| 59265— " " | 7 80 | |
| 59244— " repairs | 1 85 | |
| 59590— " service balance | 9 00 | |
| 59909— " repairs | 9 40 | |
| 60050— " " | 10 51 | |
| 61719— " service balance | 2 25 | |
| 62132— " " | 10 80 | |
| 62134— " " | 1 35 | |
| 62835— " " | 3 15 | |
| 63448— " " | 3 15 | |
| | | $86 35 |

THE DOMINION DISINFECTANT COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57416—Carbolacene | $35 20 | |
| 57865— " | 35 20 | |
| | | $70 40 |

R. E. DIETZ COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 57426—Lamps | $21 00 | |
| 60519— " | 23 96 | |
| 61143— " | 6 00 | |
| | | $50 96 |

DINGLE & ALGER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57428—Electrical supplies | $2 20 | |
| | | $2 20 |

DOMINION CHAIN COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 57593—Cotters | $22 80 | |
| 58700— " | 3 74 | |

DOMINION CHAIN COMPANY, LIMITED, ETC.—*Continued.*

| | | |
|---|---|---|
| 59969—Cotters | $15 15 | |
| 62367— " | 7 95 | |
| 62661— " | 13 46 | |
| | | $63 10 |

DOMINION BRAKE SHOE COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 57597—Brake shoes | $580 34 | |
| 57654— " truck and car shoes | 487 71 | |
| 58653— " shoes | 739 97 | |
| 59056— " " | 210 38 | |
| 60521— " " | 1,136 50 | |
| 60934— " " | 605 38 | |
| 62848— " " | 678 80 | |
| | | $4,439 08 |

G. H. DICKSON, CHIEF DRAUGHTSMAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57625—Travelling expenses | $3 75 | |
| 62261— " " | 7 70 | |
| | | $11 45 |

DOMINION PAPER BOX COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57853—Boxes | $8 00 | |
| | | $8 00 |

S. J. DEMPSAY, COCHRANE, ONT.

| | | |
|---|---|---|
| 58027—Claim No. 10620—damage to preserves | $5 00 | |
| | | $5 00 |

DETROIT & MACKINAC RAILWAY COMPANY, DETROIT, MICH.

| | | |
|---|---|---|
| 58189—Car service balance | $1 80 | |
| 58128— " " | 4 50 | |
| 59596— " " | 11 25 | |
| 60197— " " | 45 | |
| 59956— " repairs | 2 51 | |
| 63466— " service balance | 3 60 | |
| | | $24 11 |

DULUTH, WINNIPEG & PACIFIC RAILWAY COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 58373—Car repairs | $0 74 | |
| 58126— " service balance | 5 40 | |
| 59269— " " | 9 00 | |
| 59594— " " | 13 50 | |
| 60480— " " | 6 75 | |
| 61723— " " | 1 80 | |
| 62837— " " | 2 25 | |
| 63464— " " | 1 80 | |
| | | $41 24 |

J. DESJARDINE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57964—Award, W. C. B., in full settlement *re* alleged injuries received | $9 15 | |
| | | $9 15 |

MRS. A. Z. DAKTER, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 57988—Claim No. 10517—cost repairs to table damaged | $2 50 | |
| | | $2 50 |

JAMES DOIG & COMPANY, SWASTIKA, ONT.

| | | |
|---|---|---|
| 57990—Claim No. 10586—loss account damages to turpentine... | $1 75 | |
| 63185— " No. 11546—overcharge, hay ..... | 11 00 | |
| | | $12 75 |

THE DEFIANCE MACHINE COMPANY, ROCHESTER, N.Y.

| | | |
|---|---|---|
| 58342—Ink rolls ..... | $2 12 | |
| 58813— " ..... | 1 62 | |
| | | $3 74 |

DE SALES MANUFACTURING COMPANY, MONTREAL, QUE.

| | | |
|---|---|---|
| 58346—Selected white wipers ..... | $41 63 | |
| 59064—White wipers ..... | 42 00 | |
| 60523—Cotton wipers ..... | 50 85 | |
| 61145—Wipers ..... | 49 05 | |
| | | $183 53 |

ERNEST DOMMETT, MCCOOL P.O.

| | | |
|---|---|---|
| 58593—Ties ..... | $104 88 | |
| 59425— " ..... | 126 63 | |
| | | $231 51 |

THE THOS. DAVIDSON MANUFACTURING COMPANY, LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 58811—Torches ..... | $4 70 | |
| | | $4 70 |

DR. J. I. DEADMAN, COBALT, ONT.

| | | |
|---|---|---|
| 59165—Professional service ..... | $10 00 | |
| | | $10 00 |

JAMES DOUGLAS, FERONIA P.O., ONT.

| | | |
|---|---|---|
| 59425—Ties..... | $31 86 | |
| 59754— " ..... | 32 64 | |
| | | $64 50 |

DEPARTMENT OF INLAND REVENUE (FEDERAL GOVERNMENT), OTTAWA, ONT.

| | | |
|---|---|---|
| 59433—War tax ..... | $1,407 19 | |
| 61026— " " ..... | 1,989 38 | |
| 63213— " " ..... | 2,608 41 | |
| 57570— " " ..... | 1,768 81 | |
| | | $7,773 79 |

THE DENVER & SALT LAKE RAILROAD COMPANY, DENVER, COLO.

| | | |
|---|---|---|
| 59499—Car repairs..... | $1 03 | |
| 60199— " service balance..... | 7 20 | |
| 61852— " repairs..... | 5 15 | |
| 63468— " service balance..... | 90 | |
| | | $14 28 |

DEPARTMENT PUBLIC PRINTING AND STATIONERY, OTTAWA, ONT.

| | | |
|---|---|---|
| 58778—Copies "Judgment" Board of Railway Commission..... | $6 00 | |
| 58940— " " " " " ..... | 3 00 | |
| 60988— " " " " " ..... | 3 00 | |
| | | $12 00 |

DOMINION LINENS, LIMITED, GUELPH, ONT.

| | | |
|---|---|---|
| 59070—Roller towels | $62 00 | |
| 61688— " " | 27 00 | |
| | | $89 00 |

DUNHAM COMPANY, BEREA, OHIO.

| | | |
|---|---|---|
| 59082—Culte-Packer, Jr. | $11 10 | |
| | | $11 10 |

DAVIE BROS., EARLTON, ONT.

| | | |
|---|---|---|
| 59388—Claim No. 10915, loss account damage to fruit | $12 30 | |
| 61500—Ties | 332 64 | |
| 62806— " | 2,958 70 | |
| | | $3,303 64 |

DAY & GORDON, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 59939—Appeal, assessment, Timmins | $25 00 | |
| 62273—Service *re* sanitary conditions, Cobalt | 10 00 | |
| 62634— " *re* Haileybury Spur, etc | 62 89 | |
| | | $97 89 |

DUSTLESS BRUSH COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 59971—Brushes | $15 30 | |
| | | $15 30 |

DRS. DORSEY & LIPSITT, MATHESON, ONT.

| | | |
|---|---|---|
| 60221—Professional service rendered | $1 50 | |
| | | $1 50 |

DAVIS & HENDERSON, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 60529—Books | $27 00 | |
| 60730— " | 12 00 | |
| 61492— " | 60 00 | |
| | | $99 00 |

THE DAYTON MANUFACTURING COMPANY, DAYTON, OHIO.

| | | |
|---|---|---|
| 60531—Cuspidors | $10 80 | |
| 62636—Carpet nails | 3 96 | |
| | | $14 76 |

THE DUFF MANUFACTURING COMPANY, PITTSBURG, PA.

| | | |
|---|---|---|
| 60533—Steel rack, etc | $2 01 | |
| 60722—Levers, springs, etc | 4 50 | |
| | | $6 51 |

J. M. DEACON, REGISTRAR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 59996—Searches | $1 40 | |
| 63155— " | 50 | |
| | | $1 90 |

DONALD DUFF, THORNLOE P.O.

| | | |
|---|---|---|
| 60064—Ties | $79 05 | |
| | | $79 05 |

DELTA-STAR ELECTRIC COMPANY, CHICAGO, ILL.

60154—Electric lighting material ..... $28 80 $28 80

DOMINION WIRE ROPE COMPANY, LIMITED, MONTREAL, QUE.

60224—Cables ..... $65 55 $65 55

DUNLOP'S, TORONTO, ONT.

60896—Flowers ..... $12 50 $12 50

DELAWARE, LACKAWANNA & WESTERN COAL & COKE CO., BUFFALO, N.Y.

60990—Coal ..... $2,859 09
61199— " ..... 401 40
61388— " ..... 589 20 $3,849 69

DOMINION BRIDGE COMPANY, LIMITED, MONTREAL, QUE.

60985—Bridge span ..... $1,854 87 $1,854 87

J. DEMEIS, REDWATER, ONT.

61413—Meals, extra gang No. 7, bush fires ..... $7 50 $7 50

S. DAVIES, TENDERMAN, NORTH BAY, ONT.

61236—Travelling expenses ..... $3 65 $3 65

B. W. DUNNETT & COMPANY, OTTAWA, ONT.

61422—Claim No. 12157, alleged overcharge weight hay ..... $3 13 $3 13

FRANK DARON, CANE P.O.

61500—Ties ..... $116 49 $116 49

DRESSEL RAILWAY LAMP WORKS, NEW YORK, N.Y.

62469—Post lamp and brackets ..... $40 50 $40 50

R. DART, ENGLEHART, ONT.

62737—Bread ..... $6 89 $6 89

DANVILLE & WESTERN RAILWAY COMPANY, WASHINGTON, D.C.

62839—Car service balance ..... $8 10 $8 10

DUNER COMPANY, CHICAGO, ILL.

62858—Plates and hinge pins ..... $13 80 $13 80

J. L. Englehart, Toronto, Ont.

| | | |
|---|---|---|
| —Honorarium | $2,500 00 | |
| —Remuneration | 4,999 92 | |
| —Expenses | 732 00 | |
| | | $8,231 92 |

The Erie Railroad Company, New York, N.Y.

| | | |
|---|---|---|
| 56513—Car repairs | $23 24 | |
| 56965— " " | 2 42 | |
| 56864—Car service balance | 19 30 | |
| 57296—Car repairs | 65 32 | |
| 58191—Car service balance | 54 00 | |
| 58375—Car repairs | 40 05 | |
| 58130—Car service balance | 144 90 | |
| 59271— " " " | 216 20 | |
| 59407—Ticket balance | 3 80 | |
| 59475—Car repairs | 8 70 | |
| 59503— " " | 23 81 | |
| 59598—Car service balance | 160 15 | |
| 59736—Ticket balance | 32 55 | |
| 60031—Car repairs | 26 16 | |
| 60377—Ticket balance | 55 | |
| 60078—Car repairs | 23 88 | |
| 60482— " service balance | 38 25 | |
| 60626—Ticket balance | 1 39 | |
| 61163—Claim No. 10653, overcharge in rate | 36 27 | |
| 61379—Car repairs | 30 64 | |
| 61725— " service balance | 61 65 | |
| 62061—Claim No. 11709, undercharge, car coal | 48 40 | |
| 61856—Car repairs | 23 20 | |
| 61968— " " | 71 04 | |
| 62136— " service balance | 5 85 | |
| 62841— " " " | 49 50 | |
| 63470— " " " | 63 25 | |
| | | $1,274 47 |

Elgin, Joliet & Eastern Railway Company, Chicago, Ill.

| | | |
|---|---|---|
| 56515—Car repairs | $25 96 | |
| 59505— " " | 96 | |
| 59260— " " | 2 90 | |
| 59911— " " | 94 | |
| 60201— " service balance | 161 10 | |
| 59958— " repairs | 15 70 | |
| 61854— " " | 1 82 | |
| 63608— " " | 3 73 | |
| | | $213 11 |

Wm. English, Tie Inspector, North Bay, Ont.

| | | |
|---|---|---|
| 56781—Travelling expenses | $13 90 | |
| 56622— " " | 15 95 | |
| 57667— " " | 25 70 | |
| 57790— " " | 25 70 | |
| 58643— " " | 19 25 | |
| 58862— " " | 26 20 | |
| 59741— " " | 28 80 | |
| 60184— " " | 25 15 | |
| 61061— " " | 27 40 | |
| 61244— " " | 30 65 | |
| 62219— " " | 25 45 | |
| 63384— " " | 31 10 | |
| | | $295 25 |

EASTERN CANADIAN PASSENGER ASSOCIATION, MONTREAL, QUE.

| | | |
|---|---|---|
| 56841—Proportion expenses | $6 77 | |
| 57745— " " | 11 86 | |
| 59169— " " | 10 00 | |
| 60087— " " and regulation bulletins | 10 25 | |
| 62868—Rate bulletin | 13 20 | |
| | | $52 08 |

ELK LAKE POWER COMPANY, LIMITED, ELK LAKE, ONT.

| | | |
|---|---|---|
| 57023—Current supplied | $4 85 | |
| 57752— " " | 13 75 | |
| 59768— " " | 11 30 | |
| 63072— " " | 6 05 | |
| | | $35 95 |

GEO. EARL, M.M. DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 57061—Travelling expenses | $12 55 | |
| 56746— " " | 9 44 | |
| 57573— " " | 5 10 | |
| 57872— " " | 1 75 | |
| 58641— " " | 6 20 | |
| 59703— " " | 7 95 | |
| 61242— " " | 13 00 | |
| 62335— " " | 23 60 | |
| 63210— " " | 3 75 | |
| | | $83 34 |

THE E. B. EDDY COMPANY, LIMITED, HULL, P.Q.

| | | |
|---|---|---|
| 57215—Blotting paper and matches | $15 00 | |
| 57458—Toilet and wrapping paper | 52 21 | |
| 58352—Matches, paper and fibre | 46 84 | |
| 58823—Toilet paper | 14 66 | |
| 59086— " " blotters | 27 49 | |
| 60539— " " fixtures | 46 72 | |
| 60732—Paper | 23 00 | |
| 61915— " | 13 96 | |
| 61696—Matches | 26 89 | |
| 62981— " paper and fibre | 50 14 | |
| 62638— " | 27 66 | |
| | | $344 57 |

EDWARDS, MORGAN & CO., TORONTO, ONT.

| | | |
|---|---|---|
| 56722—Services rendered *re* audit | $391 88 | |
| | | $391 88 |

EL PASO & SOUTHWESTERN SYSTEMS, EL PASO, TEX.

| | | |
|---|---|---|
| 56866—Car service balance | $0 45 | |
| 58193— " " " | 45 | |
| 58132— " " " | 90 | |
| 59273— " " " | 3 60 | |
| 60054— " repairs | 83 | |
| 61727— " service balance | 45 | |
| 62138— " " " | 1 80 | |
| 63472— " " " | 1 80 | |
| | | $10 28 |

J. R. EATON & SONS, LIMITED, ORILLIA, ONT.

| | | |
|---|---|---|
| 57058—Claim No. 10307, overcharge on lumber | $2 00 | |
| | | $2 00 |

THE EVENING TELEGRAM, TORONTO, ONT.

| | | |
|---|---|---|
| 58457—Advertising demonstration car | $9 00 | |
| 59739—Advertisement | 1 80 | |
| 60737— " | 3 69 | |
| 61147— " | 3 60 | |
| 62258— " | 3 87 | |
| 63658— " | 3 78 | |
| | | $25 74 |

DR. D. T. EVANS, COCHRANE, ONT.

| | | |
|---|---|---|
| 57862—Professional services rendered | $10 00 | |
| | | $10 00 |

EMPIRE COAL COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 58514—Soft coal | $154 77 | |
| 58971—Claim No. 10940, overcharge in rate coal | 6 50 | |
| 59378—Coal | 4,530 63 | |
| 60697— " | 180 45 | |
| 60844— " | 173 03 | |
| 62589—Claim No. 12470, loss three cars coal by fire | 507 38 | |
| | | $5,552 76 |

THE ENGLEHART HOTEL, ENGLEHART, ONT.

| | | |
|---|---|---|
| 58544—Meals and lodging furnished passengers account delayed train | $20 00 | |
| | | $20 00 |

T. EATON CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58821—Thread | $7 84 | |
| 59088—Waiter coats, aprons, etc | 71 62 | |
| 61017—Jugs | 2 15 | |
| 61424—Claim No. 12392, loss carload furniture in forest fires | 1,110 94 | |
| 61694—Tapestry, buttons, etc | 84 60 | |
| 62585—Claim No. 12485, loss carload of stoves in forest fires | 1,526 76 | |
| 62866—Counterpanes and towels | 14 40 | |
| 63028—Claim No. 12705, loss sideboard, forest fires | 21 50 | |
| 63244— " No. 12709, loss seven rolls roofing, burned | 10 15 | |
| | | $2,849 96 |

G. ELIAS & BRO., BUFFALO, N.Y.

| | | |
|---|---|---|
| 58825—Poplar and white wood | $199 52 | |
| 60150—Oak | 383 43 | |
| | | $582 95 |

ENERGITE EXPLOSIVES COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 58969—Claim No. 10776, overcharge rate chlorate soda | $80 74 | |
| | | $80 74 |

MRS. E. EMBURY, PORQUIS P.O., ONT.

| | | |
|---|---|---|
| 59425—Ties | $37 97 | |
| 59754— " | 79 86 | |
| 59754— " | 20 80 | |
| | | $138 63 |

GEORGE EHELER, TOMSTOWN, ONT.

| | | |
|---|---|---|
| 59425—Ties | $82 95 | |
| | | $82 95 |

EMPLOYERS' LIABILITY ASSURANCE CORPORATION, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59034—Renewal premium, collective bond No. 29126 | $142 96 | |
| | | $142 96 |

B. S. ENGLISH, CARON, SASK.

| | | |
|---|---|---|
| 59661—Claim No. 11383—loss account baggage destroyed by fire | $100 00 | |
| | | $100 00 |

H. M. EDWARDS, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 60453—Claim No. 11434—alleged loss account damage to mill | $0 50 | |
| 62036— " No. 12445— " damage to pane glass | 50 | |
| | | $1 00 |

J. L. ENGLEHART & COMPANY, PETROLIA, ONT.

| | | |
|---|---|---|
| 60541—Iron posts | $91 35 | |
| | | $91 35 |

ENGLEHART & DISTRICT AGRICULTURAL SOCIETY, ENGLEHART, ONT.

| | | |
|---|---|---|
| 59864—Donation | $25 00 | |
| | | $25 00 |

ERIE & MICHIGAN RAILWAY & NAVIGATION COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 60484—Car service balance | $5 40 | |
| | | $5 40 |

ELKINS & SINCLAIR, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 61913—Beef | $12 20 | |
| 61950— " pork, fish, etc. | 395 15 | |
| 62983—Meat | 516 83 | |
| 62502—Beef, pork and trout | 251 03 | |
| 62976—Meat | 136 22 | |
| 63110— " | 38 50 | |
| 63276—Beef, trout | 98 03 | |
| | | $1,447 96 |

ELECTRICAL MAINTENANCE & REPAIRS COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 61278—Carbon brushes | $0 70 | |
| | | $0 70 |

EDSON MANUFACTURING COMPANY, BOSTON, MASS.

| | | |
|---|---|---|
| 61698—Hose, couplings, etc. | $29 25 | |
| | | $29 25 |

ELECTRIC SUPPLY COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61948—Condulet | $0 70 | |
| | | $0 70 |

EDMONTON, DUNVEGAN & BRITISH COLUMBIA RY., EDMONTON, ALTA.

| | | |
|---|---|---|
| 62140—Car service balance | $1 35 | |
| 62843— " " " | 3 15 | |
| 63474— " " " | 90 | |
| | | $5 40 |

W. Errett, Englehart, Ont.

| | | |
|---|---|---|
| 62633—Disbursements *re* Northern Ontario fires | $33 61 | |
| | | $33 61 |

A. K. Eddy, Cobalt, Ont.

| | | |
|---|---|---|
| 62747—Claim No. 11000—damage to stove in transit | $6 50 | |
| | | $6 50 |

Empire Manufacturing Co., Limited, London, Ont.

| | | |
|---|---|---|
| 62985—Traps, basin, supplies, etc. | $24 21 | |
| | | $24 21 |

Erie Tool Works, Inc., Erie, Pa.

| | | |
|---|---|---|
| 62987—Vises | $37 50 | |
| | | $37 50 |

Jos. G. Ellies, Timmins, Ont.

| | | |
|---|---|---|
| 62894—Claim No. 11027—alleged loss underwear | $18 00 | |
| | | $18 00 |

J. Eydt, Cobalt, Ont.

| | | |
|---|---|---|
| 63682—Claim No. 12695—alleged damage to wash bowl | $6 25 | |
| 59579—Plumbing | 1 80 | |
| | | $8 05 |

L. M. Ferguson, Telephone Inspector, North Bay, Ont.

| | | |
|---|---|---|
| 56559—Travelling expenses | $35 40 | |
| 57067— " " | 10 60 | |
| 56960— " " | 34 60 | |
| 57737— " " | 11 40 | |
| 58775— " " | 40 70 | |
| 59330— " " | 10 20 | |
| 59945— " " | 24 65 | |
| 60266— " " | 2 85 | |
| 61525— " " | 7 05 | |
| 61392— " " | 42 80 | |
| 62621— " " | 12 75 | |
| 62772— " " | 23 10 | |
| | | $256 10 |

C. L. Ferguson, Paymaster, North Bay, Ont.

| | |
|---|---|
| 56719—Passenger refunds | $323 91 |
| 56817—Payrolls | 82,630 87 |
| 57091—Expenses *re* safety organizations | 4 80 |
| 56648—Payrolls | 81,582 94 |
| 56770—Refund of deduction to cover ticket error | 43 35 |
| 57016—Passenger refunds and petty disbursements | 214 49 |
| 57182— " " postage, etc. | 371 16 |
| 57657—Payrolls | 84,605 12 |
| 57703—Disbursements and postage | 121 56 |
| 58103—Passenger refunds | 153 45 |
| 57746—Payrolls | 86,905 48 |
| 57900—Disbursements, postage, etc. | 105 61 |
| 58538—Passenger refunds | 137 25 |
| 58657—Payrolls | 92,702 14 |
| 58927—Disbursements | 88 62 |
| 59441—Rent, building and license auction sale | 32 00 |
| 58906—Disbursements, postage, etc. | 105 71 |
| 59434—Passenger refunds | 214 05 |

C. L. Ferguson, Paymaster, North Bay, Ont.—*Continued.*

| | | |
|---|---|---|
| 59436—Passenger refunds | $220 49 | |
| 59837—Payrolls | 94,777 55 | |
| 58808—Payrolls | 90,824 56 | |
| 59887—Disbursements, postage, etc. | 109 24 | |
| 60699—Passenger refunds | 176 28 | |
| 60204—Duty on soft coal | 963 50 | |
| 60226—Payrolls | 91,887 04 | |
| 60234—Disbursements for postage, etc | 106 86 | |
| 61197—Duty on coal, etc | 660 19 | |
| 61439—Payrolls | 92,866 97 | |
| 61451—Passenger refunds | 171 29 | |
| 61453—Disbursements, stamps, etc. | 89 00 | |
| 62015—Passenger refunds | 151 90 | |
| 61344—Payrolls | 96,719 93 | |
| 61384—Disbursements, stamps, etc. | 93 68 | |
| 61498—Passenger refunds | 103 40 | |
| 62235—Postage, etc. | 104 36 | |
| 62329—Payrolls | 97,059 60 | |
| 62515—Passenger refunds | 229 65 | |
| 62754—Payrolls | 100,578 04 | |
| 62768—Disbursements, postage, etc. | 118 32 | |
| 63158—Cash disbursed, account customs charges | 345 67 | |
| 63812—Passenger refunds | 221 56 | |
| | | $1,098,921 59 |

J. Hampden Field, Englehart, Ont.

| | | |
|---|---|---|
| 56823—Lot 1, Con. 3, Tp. Chamberlain, 1 acre | $50 00 | |
| | | $50 00 |

S. J. Faught, Supervisor, Englehart, Ont.

| | | |
|---|---|---|
| 56873—Travelling expenses | $16 40 | |
| 56748— " " | 11 80 | |
| 57669— " " | 10 95 | |
| 57922— " " | 4 90 | |
| 58777— " " | 18 05 | |
| 59767— " " | 17 35 | |
| 59851— " " | 16 65 | |
| 60290— " " | 16 55 | |
| | | $112 65 |

Fort Worth & Denver City Railway Co., Fort Worth, Tex.

| | | |
|---|---|---|
| 57005—Car repairs | $1 74 | |
| 58197— " service balance | 4 50 | |
| 59507— " repairs | 1 43 | |
| 59602— " service balance | 9 00 | |
| 60225— " " " | 6 75 | |
| 61970— " repairs | 4 83 | |
| 62144— " service balance | 2 70 | |
| | | $30 93 |

M. F. Fairlie, Cobalt, Ont.

| | | |
|---|---|---|
| 57349—Claim No. 10365—loss account damage to automobile | $5 45 | |
| | | $5 45 |

Frothingham & Workman, Limited, Montreal, Que.

| | |
|---|---|
| 56668—Lowmoor iron | $25 17 |
| 57503—Spring steel | 98 |
| 57656—Iron | 26 21 |
| 58561— " | 117 72 |
| 59039— " | 52 92 |

FROTHINGHAM & WORKMAN, LIMITED, ETC.—*Continued.*

| | | | |
|---|---|---|---|
| 58762—Iron | | $24 76 | |
| 58872— " | | 121 05 | |
| 59973— " | | 87 73 | |
| 60236— " | | 52 37 | |
| 61588— " | | 168 09 | |
| 61700— " | | 37 92 | |
| | | | $714 92 |

FRUIT GROWERS' EXPRESS, INC., CHICAGO, ILL.

| | | | |
|---|---|---|---|
| 56868—Car service balance | | $3 79 | |
| 58195— " " " | | 1 90 | |
| 59275— " " " | | 3 79 | |
| 59600— " " " | | 2 70 | |
| 60203— " " " | | 8 29 | |
| 60486— " " " | | 4 15 | |
| 61729— " " " | | 1 92 | |
| 62142— " " " | | 2 07 | |
| 62845— " " " | | 1 54 | |
| 63476— " " " | | 1 54 | |
| | | | $31 69 |

NEWTON L. FORSTER, OAKVILLE, ONT.

| | | | |
|---|---|---|---|
| 57060—Claim No. 10525—damage, apples | | $7 50 | |
| | | | $7 50 |

J. FAESSLER MFG. COMPANY, MOBERLY, MO.

| | | | |
|---|---|---|---|
| 57432—Sectional expanders | | $73 44 | |
| | | | $73 44 |

FUNK & WAGNALLS COMPANY, NEW YORK, N.Y.

| | | | |
|---|---|---|---|
| 57434—Dictionary | | $2 41 | |
| | | | $2 41 |

FITTINGS, LIMITED, OSHAWA, ONT.

| | | | |
|---|---|---|---|
| 57501—Fittings | | $8 20 | |
| | | | $8 20 |

JOHN FENNESSY, HAILEYBURY, ONT.

| | | | |
|---|---|---|---|
| 58029—Claim No. 10554—damage to 2 bottles gin | | $1 65 | |
| 58973— " No. 10759— " whiskey | | 1 09 | |
| 61312— " No. 11992— " liquor | | 8 64 | |
| 62637— " No. 12123 and 12581—damage to liquor | | 3 74 | |
| 63172— " No. 12185—damage to liquor | | 2 23 | |
| | | | $17 35 |

FORT DODGE, DES MOINES & SOUTHERN R. R. CO., BOONE, IA.

| | | | |
|---|---|---|---|
| 58199—Car service balance | | $2 70 | |
| 58134— " " " | | 2 70 | |
| 59604— " " " | | 13 95 | |
| 60227— " " " | | 23 40 | |
| 60488— " " " | | 6 30 | |
| 61731— " " " | | 7 20 | |
| 62146— " " " | | 4 05 | |
| 62847— " " " | | 31 50 | |
| 63478— " " " | | 13 50 | |
| | | | $105 30 |

J. Filiatrault, Porquis Jct.

| | | |
|---|---|---|
| 58463—Ties | $117 40 | |
| 58593— " | 65 60 | |
| 61500— " | 164 94 | |
| | | $347 94 |

Frost Wire Fence Company, Limited, Hamilton, Ont.

| | | |
|---|---|---|
| 57594—Wire | $740 55 | |
| 62663—Wire | 836 22 | |
| | | $1,576 77 |

O. Frumkin, South Porcupine, Ont.

| | | |
|---|---|---|
| 57994—Claim No. 10682—Loss account, shortage one case sausage | $27 13 | |
| | | $27 13 |

Freight Claim Association, Richmond, Va.

| | | |
|---|---|---|
| 58540—Constitutions and circulars | $1 04 | |
| 60417—Assessment | 12 00 | |
| | | $13 04 |

Firemen's Association of Ontario, Toronto, Ont.

| | | |
|---|---|---|
| 58503—Advertisement—Annual report | $10 00 | |
| | | $10 00 |

George Fulton, Kenabeek P.O.

| | | |
|---|---|---|
| 58593—Ties | $111 44 | |
| 60064—Ties | 62 20 | |
| | | $173 64 |

Forsyth Bros., Company, Chicago, Ill.

| | | |
|---|---|---|
| 58327—Sash rackets | $57 60 | |
| | | $57 60 |

Fort Smith & Western Railroad, Fort Smith, Ark.

| | | |
|---|---|---|
| 59277—Car service balance | $3 15 | |
| 61733—Car service balance | 2 70 | |
| | | $5 85 |

Florida East Coast Railway, St. Augustine, Fla.

| | | |
|---|---|---|
| 59279—Car service balance | $0 45 | |
| 59606— " " | 4 05 | |
| 60229— " " | 13 50 | |
| 60490— " " | 3 15 | |
| 61735— " " | 5 40 | |
| 61839—Ticket balance | 125 70 | |
| 62148—Car service balance | 90 | |
| | | $153 15 |

Ferguson & McFadden, Tomiko, Ont.

| | | |
|---|---|---|
| 58824—Claim No. 11037—Loss account, shortage, case oranges | $4 50 | |
| 62593—Claim No. 12536—Overcharge lumber | 9 07 | |
| 62640—Wood | 3 00 | |
| | | $16 57 |

A. A. Fraser, Instrumentman, North Bay, Ont.

| | | |
|---|---|---|
| 59831—Travelling expenses | $10 75 | |
| 61575— " | 31 75 | |
| 61394— " | 14 00 | |
| 63212— " | 44 25 | |
| | | $100 75 |

FRISCO REFRIGERATOR LINE, ST. LOUIS, MO.

| | | |
|---|---|---|
| 60231—Car service balance | $4 99 | |
| 60492— " " | 80 | |
| 61737— " " | 3 79 | |
| 62849— " " | 3 87 | |
| | | $13 45 |

W. J. FIELDING, PORQUIS JCT., ONT.

| | | |
|---|---|---|
| 60441—Claim No. 11173—Overcharge car rental charges | $6 00 | |
| | | $6 00 |

F. FELDMAN, TIMMINS, ONT.

| | | |
|---|---|---|
| 59872—Claim No. 10984—Loss account, potatoes and onions by frost | $13 00 | |
| | | $13 00 |

WILLIAM FLOOD, MCCOOL P.O.

| | | |
|---|---|---|
| 60064—Ties | $44 07 | |
| | | $44 07 |

WILLIAM FIELDS, EARLTON P.O.

| | | |
|---|---|---|
| 60064—Ties | $50 40 | |
| 60064—Ties | 39 87 | |
| | | $90 27 |

FROST STEEL, & WIRE CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 60144—Wire | $933 60 | |
| | | $933 60 |

T. W. FOSTER, KIRKLAND LAKE, P.O.

| | | |
|---|---|---|
| 60915—Claim No. 11112—Overcharge, freight, canoe | $4 08 | |
| | | $4 08 |

CHAS. FRITZ, KENABEEK, ONT.

| | | |
|---|---|---|
| 60163—Ties | $225 90 | |
| | | $225 90 |

FACTORY PRODUCTS, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 61577—Wall brackets, fittings, etc. | $71 15 | |
| | | $71 15 |

GEO. A. FINLEY, CHARLTON, ONT.

| | | |
|---|---|---|
| 61428—Claim No. 10875—Alleged damage, household goods | $50 00 | |
| | | $50 00 |

WILLIAM FARMER, BRAKEMAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61198—Award W. C. B. final payment *re* alleged injuries | $15 89 | |
| | | $15 89 |

WALTER FOWKE, CHARLTON P.O.

| | | |
|---|---|---|
| 61500—Ties | $122 97 | |
| | | $122 97 |

FOSTER POTTERY COMPANY, HAMILTON, ONT.

| | | |
|---|---|---|
| 62393—Flower pots | $13 09 | |
| | | $13 09 |

THOS. FENTON, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62388—Amount paid *re* alleged injuries | $100 00 | |
| | | $100 00 |

S. J. FAUGHT, SUPERVISOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62482—Travelling expenses | $21 05 | |
| | | $21 05 |

A. & F. FISHER, TORONTO, ONT.

| | | |
|---|---|---|
| 63074—Shelving vault, Toronto office | $45 65 | |
| | | $45 65 |

T. J. GRACEY, ACCOUNTANT, TORONTO.

| | | |
|---|---|---|
| 56461—Salary, November, 1915 | $150 00 | |
| 56593—Additional salary, November and December, 1915 | 20 00 | |
| 56592—Salary, December, 1915 | 150 00 | |
| 57471— " January, 1916 | 160 00 | |
| 57600— " February, 1916 | 160 00 | |
| 58493— " March, 1916 | 160 00 | |
| 58622— " April, 1916 | 160 00 | |
| 59929— " May, 1916 | 160 00 | |
| 59802— " June, 1916 | 160 00 | |
| 60186—Travelling expenses | 14 50 | |
| | | $1,294 50 |

GRAND TRUNK RAILWAY SYSTEM, MONTREAL, P.Q.

| | |
|---|---|
| 56481—Freight, settlement | $1,908 90 |
| 56557—Proportion cost, advertising, Thos Cook & Son tour, New York, Prince Rupert, car repairs, rental of cinder cars, etc. | 412 32 |
| 56571—Claims | 49 17 |
| 56579—Freight settlement | 1,041 84 |
| 56585—On account interline freight | 900 00 |
| 56653—Claims | 76 84 |
| 56685—On account interline freight | 1,500 00 |
| 56687— " " " " | 4,000 00 |
| 56929— " " " " | 7,000 00 |
| 57089—Interline freight, balance | 4,906 44 |
| 57351—Claim | 10 71 |
| 57423—Loss, dining car Toronto to Winnipeg | 419 22 |
| 57425—Proportion expenses parlor cafe cars, Toronto to Englehart | 2,599 34 |
| 57427—Rental cinder cars, switching, etc. | 101 02 |
| 56536—Interline freight, account | 8,000 00 |
| 56566— " " | 3,000 00 |
| 56624— " " | 400 00 |
| 56776— " " | 1,000 00 |
| 56870—Car service balance | 8,178 36 |
| 57030—Claims | 89 93 |
| 57234—Car repairs | 141 77 |
| 57572—Line service, switching and weighing cars | 203 14 |
| 56518—Freight settlement | 1,222 48 |
| 57529— " " | 700 00 |
| 57539— " " | 506 92 |
| 57661—Interline freight balance | 6,118 53 |
| 57747—On account interline freight | 7,000 00 |
| 57749—Rent cinder cars, commission on tickets, supplies and tariffs | 416 65 |
| 58031—Claims | 71 83 |
| 58105—Proportion profit on ice house | 1,130 21 |
| 58201—Car service balance | 2,053 55 |
| 58303—Passenger car mileage | 1,053 74 |
| 58315—Ticket balance | 3,724 55 |
| 58349—Interline freight balance | 10,241 06 |
| 58409—Car repairs | 682 97 |

GRAND TRUNK RAILWAY SYSTEM, ETC.—*Continued.*

| | |
|---|---|
| 58441—Prop'n adv't Transcontinental train service | 1,014 28 |
| 58465—Loss parlor cafe cars, weighing cars and switching | 872 74 |
| 57596—Freight settlement | 3,688 84 |
| 57612— " " | 541 96 |
| 57622—On account interline freight | 3,000 00 |
| 57628—Freight settlement | 624 48 |
| 57694— " " | 1,145 16 |
| 57902—Proportion expenses *re* "National" | 46 11 |
| 57904—Proportion commission adv't and tolls, switching charges | 102 27 |
| 58136—Car service balance | 2,076 73 |
| 58248—Passenger car mileage | 1,079 84 |
| 58254—Ticket balance | 64 06 |
| 58494—Interline freight balance | 18,474 81 |
| 58598—Commission, loss dining and parlor, supplies and weighing car revenue | 524 78 |
| 58511—Freight settlement | 2,069 17 |
| 59083—Claims | 44 78 |
| 59141—Proportion profit, ice house, North Bay | 790 50 |
| 59171— " commission, Frank Tourist Co. | 3 41 |
| 59281—Car service balance | 3,375 85 |
| 59395—Passenger car mileage | 1,013 59 |
| 59409—Ticket balance | 1,140 79 |
| 59515—Car repairs, prop'n exp. pullmans and cars, Toronto to Englehart and Cochrane | 453 43 |
| 59611—Prop'n loss cafe service, weighing cars, etc. | 557 62 |
| 58648—Freight settlement | 1,137 18 |
| 58682—Claims | 121 02 |
| 58694—Freight settlement | 825 51 |
| 59026—Claims | 52 55 |
| 59608—Car service balance | 5,746 19 |
| 59726—Passenger car mileage | 1,210 26 |
| 59738—Ticket balance | 156 39 |
| 59629—Freight settlement | 386 09 |
| 59713—Freight settlement | 1,363 13 |
| 60107—Claims | 8 47 |
| 60233—Car service balance | 6,757 44 |
| 60367—Car service balance | 1,474 98 |
| 60379—Ticket balance | 1,367 16 |
| 60513—Claims | 140 29 |
| 60769—One-third loss operating cafe cars | 254 92 |
| 59810—Freight settlement | 479 10 |
| 59846— " " | 1,690 20 |
| 59880— " " | 1,102 06 |
| 60160— " " | 398 08 |
| 60362—Proportion commission outside agents | 32 66 |
| 60492—Car service balance | 3,021 30 |
| 60616—Passenger car mileage | 1,937 98 |
| 60668—G. T. No. 6935 destroyed, car repairs, wheels | 1,882 55 |
| 60846—Rental cinder cars, supplies private car | 128 74 |
| 61012—Interline freight balance | 18,702 13 |
| 60821—Freight settlement | 225 06 |
| 60841— " " | 510 54 |
| 60969— " " | 1,555 65 |
| 60973—Claims | 211 73 |
| 60975—Claims | 170 56 |
| 61095—Freight settlement | 75 38 |
| 61165—Claims | 75 73 |
| 61381—Cost advertising, car repairs | 273 30 |
| 61383—Rental cinder cars | 389 28 |
| 61455—Cost of distributing T. C. L. time-tables | 200 36 |
| 61457—Proportion operation pullmans, etc. | 612 52 |
| 61479—Claims | 6 70 |
| 61529—Inspecting track scales at North Bay | 13 71 |
| 61621—Claims | 33 16 |
| 61739—Car service balance | 1,658 46 |
| 61855—Passenger car mileage | 1,768 47 |
| 61873—Claims | 32 72 |

GRAND TRUNK RAILWAY SYSTEM, ETC.—*Continued.*

| | | |
|---|---|---|
| 62063—Claims | $228 88 | |
| 62117—Interline freight balance | 20,158 61 | |
| 61046—Freight settlement | 881 53 | |
| 61058— " " | 1,696 48 | |
| 61074— " " | 1,518 18 | |
| 61098—Car repairs | 42 | |
| 61138—Car repairs and wheels | 346 63 | |
| 61146—Advertising T. C. R. service | 1,340 69 | |
| 61208—Freight settlement | 4,025 14 | |
| 61314—Claims | 1 30 | |
| 61368— " | 20 89 | |
| 61430— " | 39 03 | |
| 61894— " | 113 39 | |
| 62038—Claim | 1 04 | |
| 62220—Passenger car mileage | 1,159 18 | |
| 62260—Claims | 1,120 95 | |
| 62322—Interline freight balance | 5,744 90 | |
| 62141—Freight settlement | 2,096 19 | |
| 62155— " " | 2,948 67 | |
| 62183— " " | 1,998 29 | |
| 62209— " " | 2,359 86 | |
| 62851—Car service balance | 1,837 85 | |
| 62941—Passenger car mileage | 640 36 | |
| 62965—Interline freight balance | 20,599 72 | |
| 63095—Claims | 96 56 | |
| 63211—Claims | 118 10 | |
| 62354—Freight settlement | 3,319 06 | |
| 62366— " " | 987 24 | |
| 62382— " " | 2,080 83 | |
| 62476— " " | 2,158 61 | |
| 62508—Proportion loss operating dining cars, etc. | 221 48 | |
| 62978—Claims | 15 36 | |
| 63078—Joint switching, etc. | 138 27 | |
| 63160—Fifty per cent. charged C. P. R. attending heaters | 515 72 | |
| 63226—Claims | 3 80 | |
| 63480—Car service balance | 2,039 62 | |
| 63612—Proportion amount charged S. J. Gordon, rental of warehouse | 27 79 | |
| 63614—Proportion expenses cars Toronto to Cochrane | 80 07 | |
| 63618—Car repairs | 64 05 | |
| 63708—Claims | 65 49 | |
| 63754—Car repairs | 4 22 | |
| 63796—Fifty per cent. amount charged C. N. R. attending heaters, North Bay Junction | 2 28 | |
| 63848—Supplies for private cars, net loss operating dining cars | 168 86 | |
| | | $264,741 99 |

W. A. GRAHAM, PURCHASING AGENT AND STOREKEEPER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56679—Salary, November, 1915 | $200 00 | |
| 56640— " December, 1915 | 200 00 | |
| 57649— " January, 1916 | 200 00 | |
| 57738— " February, 1916 | 200 00 | |
| 58663— " March, 1916 | 200 00 | |
| 58812— " April, 1916 | 200 00 | |
| 59821— " May, 1916 | 200 00 | |
| 60216— " June, 1916 | 200 00 | |
| 60790—Travelling expenses | 9 50 | |
| 61327—Salary, July, 1916 | 200 00 | |
| 61581—Disbursements | 2 65 | |
| 61184—Salary, August, 1916 | 200 00 | |
| 62247— " September, 1916 | 200 00 | |
| 62602— " October, 1916 | 200 00 | |
| | | $2,412 15 |

THE GRAHAM NAIL WORKS, TORONTO.

| | | |
|---|---|---|
| 56703—Wire nails | $31 80 | |
| 56986— " " | 95 89 | |

THE GRAHAM NAIL WORKS, TORONTO.—*Continued.*

| | | |
|---|---|---|
| 57681—Wire nails | $113 63 | |
| 57808— " " | 112 21 | |
| 58565— " " | 239 37 | |
| 59673— " " | 204 97 | |
| 60134— " " | 138 18 | |
| 62371— " " | 424 10 | |
| | | $1,360 15 |

GREAT NORTH WESTERN TELEGRAPH COMPANY OF CANADA.

| | | |
|---|---|---|
| 56721—Telegraph service | $0 51 | |
| 56843— " " | 6 31 | |
| 57025— " " | 56 | |
| 57184— " " | 5 76 | |
| 57711— " " | 1 20 | |
| 58107— " " | 1 24 | |
| 57906— " " | 1 03 | |
| 58498— " " | 4 82 | |
| 58542— " " | 11 76 | |
| 59447— " " | 1 70 | |
| 58942— " " | 4 66 | |
| 59464— " " | 12 16 | |
| 59466— " " | 76 | |
| 59764— " " | 25 72 | |
| 60003— " " | 3 54 | |
| 60089—Tariff books | 12 00 | |
| 60739—Telegraph service | 5 95 | |
| 60652— " " | 4 64 | |
| 60938— " " | 1 92 | |
| 60940— " " | 2 71 | |
| 60992— " " | 4 28 | |
| 61459— " " | 52 | |
| 61953— " " | 8 88 | |
| 62017— " " | 59 | |
| 62113— " " | 14 05 | |
| 61630— " " | 4 03 | |
| 62264— " " | 41 | |
| 62504— " " | 4 48 | |
| 63076— " " | 6 53 | |
| 63118— " " | 3 26 | |
| 63580— " " | 16 11 | |
| 63664— " " | 59 | |
| | | $172 68 |

THE GLOBE PRINTING COMPANY, TORONTO.

| | | |
|---|---|---|
| 56723—Advertising | $0 60 | |
| 56774— " | 56 | |
| 57705— " | 50 00 | |
| 57707— " and subscription | 3 80 | |
| 58496— " | 80 | |
| 58782— " | 84 | |
| 59460— " | 33 00 | |
| 59998— " | 1 64 | |
| 61118— " | 1 68 | |
| 62264— " | 1 64 | |
| 62506— " | 3 36 | |
| | | $97 92 |

GULF, COLORADO & SANTA FE RAILWAY CO., GALVESTON, TEXAS.

| | | |
|---|---|---|
| 56799—Car repairs | $7 65 | |
| 57300— " " | 4 91 | |
| 58205— " service balance | 1 80 | |
| 59477— " repairs | 7 87 | |
| 59511— " " | 1 25 | |
| 60082— " " | 6 43 | |

GULF, COLORADO & SANTA FE RAILWAY COMPANY, ETC.—*Continued.*

| | | |
|---|---|---|
| 61285—Car repairs | $6 29 | |
| 61858— " " | 5 12 | |
| 62266— " " | 8 66 | |
| 63610— " " | 8 66 | |
| | | $58 64 |

W. A. GRIFFIN, SUPERINTENDENT OF TRAFFIC, NORTH BAY.

| | | |
|---|---|---|
| 56811—Salary, November, 1915 | $270 00 | |
| 56638—Salary, December, 1915 | 270 00 | |
| 56962—Travelling expenses | 46 60 | |
| 57647—Salary, January, 1916 | 270 00 | |
| 57736—Salary, February, 1916 | 270 00 | |
| 57970—Travelling expenses | 23 90 | |
| 58589—Travelling expenses | 13 95 | |
| 58661—Salary, March, 1916 | 270 00 | |
| 58814—Salary, April, 1916 | 270 00 | |
| 59250—Travelling expenses | 12 05 | |
| 59819—Salary, May, 1916 | 270 00 | |
| 60101—Travelling expenses | 29 85 | |
| 60214—Salary, June, 1916 | 270 00 | |
| 61325— " July, 1916 | 270 00 | |
| 61186— " August, 1916 | 270 00 | |
| 61502—Travelling expenses | 35 55 | |
| 62245—Salary, September, 1916 | 270 00 | |
| 62604—Salary, October, 1916 | 270 00 | |
| 62612—Travelling expenses | 30 70 | |
| | | $3,432 60 |

MISS T. GREGORY, STENOGRAPHER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56813—Service rendered | $65 00 | |
| 56642— " " | 65 00 | |
| 57651— " " | 65 00 | |
| 57740— " " | 65 00 | |
| 58665— " " | 65 00 | |
| 58816— " " | 65 00 | |
| 59823— " " | 65 00 | |
| 60218— " " | 65 00 | |
| 61329— " " | 65 00 | |
| 61190— " " | 65 00 | |
| 62249— " " | 65 00 | |
| 62606— " " | 65 00 | |
| | | $780 00 |

E. M. GOODMAN, AGENT, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 56815—Remuneration, additional, November, 1915 | $10 00 | |
| 56644— " " December, 1915 | 10 00 | |
| 57653— " " January, 1916 | 10 00 | |
| 57742— " " February, 1916 | 10 00 | |
| 58667— " " March, 1916 | 10 00 | |
| 58818— " " April, 1916 | 10 00 | |
| 59825— " " May, 1916 | 10 00 | |
| 60220— " " June, 1916 | 10 00 | |
| 61331— " " July, 1916 | 10 00 | |
| 61192— " " August, 1916 | 10 00 | |
| 62251— " " September, 1916 | 10 00 | |
| 62608— " " October, 1916 | 10 00 | |
| | | $120 00 |

GILL & LONG, TORONTO.

| | | |
|---|---|---|
| 56845—Motor car service | $0 75 | |
| 56772—Livery service | 75 | |
| 62641—Motor car service | 75 | |
| | | $2 25 |

THE GURNEY FOUNDRY COMPANY, LTD., TORONTO.

| | | |
|---|---|---|
| 56895—Van stoves | $36 57 | |
| 57239—Grates and grate bar | 8 10 | |
| 58035—Claim No. 10481, cost repairs to radiator damaged in transit | 2 40 | |
| 58362—Grates and grate hangers | 7 37 | |
| 58837—Cook stove | 26 18 | |
| 60308—Copper wire | 75 00 | |
| 61480—Saddle | 5 50 | |
| 62399—Stoves | 38 91 | |
| 63001—Cash drawers | 9 00 | |
| 62874—Coal door, grates, etc. | 30 45 | |
| | | $239 48 |

THE B. GREENING WIRE COMPANY, LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 56897—Wire | $41 99 | |
| 57505— " | 48 48 | |
| 57658— " | 60 91 | |
| 58835— " | 42 78 | |
| 58702—Cast steel rope | 55 22 | |
| 59675—Steel rope | 32 24 | |
| 59975—Netting, iron, etc. | 393 02 | |
| 60136—Wire | 180 44 | |
| 60238—Wire cloth, wire rope | 59 11 | |
| 60987—Steel rope, copper wire | 53 19 | |
| 61590—Brass riddle cloth | 156 07 | |
| 62395—Wire, rope, etc. | 41 45 | |
| 62592—Ballast rope | 563 99 | |
| | | $1,728 89 |

GREAT NORTHERN RAILWAY COMPANY, ST. PAUL, MINN.

| | | |
|---|---|---|
| 57101—Car repairs | $27 20 | |
| 56872—Car service balance | 39 82 | |
| 57298—Car repairs | 1 12 | |
| 58203—Car service balance | 11 30 | |
| 58305—Passenger car mileage | 11 38 | |
| 58138—Car service balance | 24 45 | |
| 59283— " " " | 8 10 | |
| 59479— " repairs | 6 92 | |
| 59513— " " | 2 66 | |
| 59262— " " | 1 88 | |
| 59610— " service balance | 2 70 | |
| 60235— " " " | 24 30 | |
| 60369— " " " (passenger) | 7 59 | |
| 60080— " repairs | 1 64 | |
| 60496— " service balance | 16 20 | |
| 60618—Passenger car mileage | 11 38 | |
| 61741—Car service balance | 13 50 | |
| 61857—Passenger car mileage | 7 59 | |
| 61100—Car repairs | 21 01 | |
| 62150—Car service balance | 1 80 | |
| 62853—Car service balance | 2 25 | |
| 62943—Passenger car mileage | 41 74 | |
| 63482—Car service balance | 62 32 | |
| 63574—Ticket balance | 5 84 | |
| | | $354 69 |

THE GOUROCK ROPEWORK EXPORT CO., LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57217—Rope | $11 00 | |
| 57867— " | 43 31 | |
| 58833— " | 56 55 | |
| 59090— " | 26 37 | |
| 60742— " | 18 00 | |
| 63117— " | 108 33 | |
| | | $263 56 |

GALENA-SIGNAL OIL COMPANY, TORONTO.

| | | |
|---|---|---|
| 57219—Oil and grease | $591 65 | |
| 57442—Oil, grease and air brake compound | 755 57 | |
| 57873—Oil and grease | 635 60 | |
| 58360— " " | 1,027 95 | |
| 58829— " | 1,014 55 | |
| 59096—Oil, and air brake compound | 1,067 61 | |
| 60549—Oil | 1,112 92 | |
| 60740— " | 1,049 39 | |
| 61209— " | 666 08 | |
| 62991—Oil and grease | 814 79 | |
| 63112—Oil | 942 00 | |
| | | $9,678 11 |

GEO. GORDON & CO., LIMITED, CACHE BAY, ONT.

| | | |
|---|---|---|
| 57235—White pine | $221 03 | |
| 57438—White and red pine | 505 92 | |
| 57869—Lumber | 566 27 | |
| 61702— " | 3,871 96 | |
| 62551— " | 410 50 | |
| 62997— " | 2,068 67 | |
| 63116— " | 173 74 | |
| 63684—Claim No. 12912—Overcharge rate, car hardware and supplies | 26 64 | |
| | | $7,844 73 |

J. R. GORDON, TIMMINS, ONT.

| | | |
|---|---|---|
| 57237—Meat | $11 13 | |
| | | $11 13 |

GUTTA PERCHA & RUBBER, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56554—Hose | $119 07 | |
| 57599— " | 279 79 | |
| 57679— " | 84 77 | |
| 57798—Hose and valves | 303 43 | |
| 58649—Hose | 93 84 | |
| 60132— " | 393 96 | |
| 60210— " | 191 10 | |
| 61917—Hose and tubing | 97 16 | |
| 61478—Hose | 43 60 | |
| 62397— " | 266 72 | |
| 62594— " | 267 54 | |
| 62680— " | 114 66 | |
| | | $2,255 64 |

GRAND & TOY, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56778—Stationery and transfer cases, etc. | $99 56 | |
| 57936—Stationery | 125 07 | |
| 59462—Carbon, letter heads, etc. | 50 63 | |
| 59743—Stationery | 106 02 | |
| 60005—Stationery | 47 74 | |
| 60551—Paper | 22 50 | |
| 61527—Stationery | 79 80 | |
| 61957—Stationery | 163 69 | |
| 61628—Index | 2 10 | |
| 62999—Stationery | 82 13 | |
| 62918—Stationery | 73 60 | |
| | | $852 84 |

GEORGIA RAILROAD, AUGUSTA, GA.

| | | |
|---|---|---|
| 56874—Car service balance | $11 25 | |
| 63662—Car service balance | 1 35 | |
| | | $12 60 |

ADELARD GRATTON, IROQUOIS FALLS, ONT.

| | | |
|---|---|---|
| 57014—Donation account, horse alleged killed | $25 00 | |
| | | $25 00 |

R. P. GRAHAM, COBALT, ONT.

| | | |
|---|---|---|
| 58033—Claim No. 10618—Loss account, shortage, 1 case meat... | $4 80 | |
| 57072—Claim No. 10617—Loss account, 3 bottles syrup | $1 08 | |
| | | $5 88 |

THE GARLOCK PACKING COMPANY, HAMILTON, ONT.

| | | |
|---|---|---|
| 57436—Spiral packing | $28 25 | |
| 58831—Packing | 56 53 | |
| 60545— " etc. | 58 83 | |
| 60738— " | 18 00 | |
| 61704— " | 70 94 | |
| 62993— " | 34 64 | |
| | | $267 19 |

THE GENERAL SUPPLY CO. OF CANADA, LIMITED, OTTAWA, ONT.

| | | |
|---|---|---|
| 57440—Fittings | $50 26 | |
| 57891— " | 20 14 | |
| 58354— " | 33 14 | |
| 59041— " | 127 22 | |
| 59092—Couplings, valves, etc. | 52 59 | |
| 60543—Bushings, plugs, etc. | 14 98 | |
| 60736—Couplings, bushings, etc. | 144 56 | |
| 60942—Unions, nipples, etc. | 51 84 | |
| 61019—Plugs, tees, flanges | 11 39 | |
| 61955—Bushings, plugs, elbows | 20 62 | |
| 61706—Nipples, elbows, couplings | 3 02 | |
| 62995—Elbows, bushings, etc. | 72 13 | |
| 62872—Street ells, bushings, etc. | 45 15 | |
| 63114—Dart unions, nipples, etc. | 24 49 | |
| 63278—Elbows | 52 | |
| | | $672 05 |

A. D. GIBSON, TORONTO, ONT.

| | | |
|---|---|---|
| 57639—Napkins | $48 00 | |
| | | $48 00 |

F. R. GIBSON, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 57709—Installing heating system | $258 30 | |
| 58500—Installing heating system (bal.) | 28 70 | |
| 58993—Claim No. 10763—Loss account, damage to closet tank .. | 9 50 | |
| 59468—Repairs—Englehart station | 14 87 | |
| 59773—Repairs to tap | 75 | |
| 61810—Claim No. 12372—damage, 1 lav. plate | 6 15 | |
| | | $318 27 |

J. GAMMAGE & SONS, LIMITED, LONDON, ONT.

| | | |
|---|---|---|
| 57871—Cuttings | $5 50 | |
| | | $5 50 |

GREEN BAY & WESTERN RAILROAD COMPANY, GREEN BAY, WIS.

| | | |
|---|---|---|
| 58207—Car service balance | $0 45 | |
| 58140— " " | 7 65 | |
| 60237— " " | 45 | |
| 60498— " " | 4 05 | |
| 61283—Car repairs | 2 99 | |
| 61972—Car repairs | 1 50 | |
| 63484—Car service balance | 45 | |
| | | $17 54 |

GILMORE & PITTSBURGH RAILROAD, ORMSTEAD, MONT.

| | | |
|---|---|---|
| 58209—Car service balance | $3 60 | |
| | | $3 60 |

A. GAGNE, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 57996—Claim No. 10707—Loss account, damage to stove | $3 00 | |
| 63097—Claim No. 11536—Damage to glassware | 9 97 | |
| | | $12 97 |

R. GARRIOCK, COCHRANE, ONT.

| | | |
|---|---|---|
| 57998—Claim No. 10571—Loss account, shortage bed rails | 6 00 | |
| | | $6 00 |

GEORGIA SOUTHERN & FLORIDA RAILWAY COMPANY, MACON, GA.

| | | |
|---|---|---|
| 58142—Car service balance | $1 35 | |
| 59285— " " | 90 | |
| 60241— " " | 11 70 | |
| 60502— " " | 4 95 | |
| 61743— " " | 5 85 | |
| 62152— " " | 9 45 | |
| | | $34 20 |

CHAS. S. GILES, COCHRANE, ONT.

| | | |
|---|---|---|
| 58502—Repairing to heating system | $55 71 | |
| 59443—Plumbing | 7 55 | |
| 61207—Plumbing | 2 10 | |
| | | $65 36 |

GRAND TRUNK PACIFIC RAILWAY COMPANY, MONTREAL, QUE.

| | | |
|---|---|---|
| 58600—Telegraph charges, account Transcontinental train service | $4 20 | |
| 61952—Claims | 5 86 | |
| 62749—Claims | 10 13 | |
| 63157—Propn. expenses, Trans. freight bureau | 13 46 | |
| 62870—Expenses—T. C. freight bureau | 73 05 | |
| 62980—Claim | 66 | |
| 63120—Propn. expenses, T. C. R. freight bureau | 12 63 | |
| 63174—Claim | 1 10 | |
| 63616—Car repairs | 3,236 52 | |
| | | $3,357 61 |

GRAND UNION HOTEL, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 58602—Breakfast furnished passengers, account delayed train | $4 50 | |
| 62313—Claim No. 12403—Loss, gin | 2 52 | |
| | | $7 02 |

GURNEY SCALE COMPANY, HAMILTON, ONT.

| | | |
|---|---|---|
| 58563—Cash drawers | $5 88 | |
| | | $5 88 |

S. GREENWOOD & SONS, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 58975—Claim No. 10680—Loss account, shortage, bag bran | $1 15 | |
| 59886—Claim No. 9921—Overcharge in weight, shipment potatoes | 6 46 | |
| | | $7 61 |

HOTEL GOLDFIELD, TIMMINS, ONT.

| | | |
|---|---|---|
| 59445—Board and lodging furnished | $4 00 | |
| 60014— " " | 6 00 | |
| 62037— " " | 84 50 | |
| 61120— " " | 6 00 | |
| 62510— " " | 4 00 | |
| 62712— " " | 6 00 | |
| 63660— " " | 21 00 | |
| | | $131 50 |

GALVESTON, HARRISBURG & SAN ANTONIO RAILWAY COMPANY, HOUSTON, TEXAS.

| | | |
|---|---|---|
| 59509—Car repairs | $1 94 | |
| 60500—Car service balance | 5 05 | |
| 60628—Ticket balance | 24 88 | |
| 62024—Car repairs | 2 64 | |
| | | $34 51 |

R. M. GARROW, PORCUPINE, ONT.

| | | |
|---|---|---|
| 59390—Claim No. 11062—Loss account, shortage sugar | $1 40 | |
| | | $1 40 |

GULF & SHIP ISLAND RAILROAD, GULFPORT, MISS.

| | | |
|---|---|---|
| 60239—Car service balance | 1 80 | |
| | | $1 80 |

JOHN GRIEVE (M.P. DEPT.), COCHRANE, ONT.

| | | |
|---|---|---|
| 60509—Travelling expenses | $5 20 | |
| 60650— " | 2 80 | |
| 61579— " | 2 40 | |
| 61246— " | 4 00 | |
| 62337— " | 2 80 | |
| 63214— " | 2 40 | |
| | | $19 60 |

GIFFORD-WOOD COMPANY, HUDSON, N.Y.

| | | |
|---|---|---|
| 60547—Chisels, tongs, etc. | $27 01 | |
| | | $27 01 |

GALVESTON WHARF COMPANY, GALVESTON, TEXAS.

| | | |
|---|---|---|
| 59960—Repairs to cars | $2 51 | |
| | | $2 51 |

GRANT-HOLDEN & GRAHAM, LIMITED, OTTAWA, ONT.

| | | |
|---|---|---|
| 60734—Mail bags | $9 60 | |
| | | $9 60 |

GENERAL MANIFOLD & PRINTING COMPANY, FRANKLIN, PA.

| | | |
|---|---|---|
| 60744—Books | $43 52 | |
| 62553—Books | 46 92 | |
| | | $90 44 |

C. GUITARD, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61481—Claim No. 11574—Shortage, bundles saws | $5 00 | |
| | | $5 00 |

GALT, PRESTON & HESPELER STREET RAILWAY COMPANY, GALT, ONT.

| | | |
|---|---|---|
| 61619—Claim No. 10567—Overcharge, weight, car beer | $7 90 | |
| 61366—Claim No. 11958—Overcharge, car beer, Kuntz Brewery | 9 05 | |
| | | $16 95 |

GILLIES BROS., LIMITED, BRAESIDE, ONT.

| | | |
|---|---|---|
| 62065—Claim No. 11444—Alleged loss spindles | $15 00 | |
| | | $15 00 |

GRIP, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 61280—Printing coloured maps | $33 00 | |
| | | $33 00 |

THE GRILLS COMPANY, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 62040—Claim No. 12287—alleged loss four bags potatoes..... | $6 00 | |
| | | $6 00 |

B. F. GARDINER, THORNLOE, ONT.

| | | |
|---|---|---|
| 62549—Slabs ..... | $36 75 | |
| | | $36 75 |

A. W. GOLDING, COCHRANE, ONT.

| | | |
|---|---|---|
| 62639—Claim No. 12508—alleged loss jam ..... | $16 50 | |
| | | $16 50 |

W. H. GILLARD & COMPANY, HAMILTON, ONT.

| | | |
|---|---|---|
| 62641—Claim No. 12325—alleged loss matches burnt..... | $20 38 | |
| | | $20 38 |

W. F. GOOD, WABUN P.O.

| | | |
|---|---|---|
| 62669—Ties ..... | $684 27 | |
| | | $684 27 |

GRASSELLI CHEMICAL COMPANY, LIMITED, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 62855—Car service balance ..... | $1 90 | |
| 63486— " " ..... | 5 69 | |
| | | $7 59 |

GORDON H. GAUTHIER, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 62710—Professional services ..... | $5 00 | |
| | | $5 00 |

SIMON HENEROFSKY, ENGLEHART, ONT.

| | | |
|---|---|---|
| 56451—North half Lot 1, Con. 5, Chamberlain, 1.5 acres..... | $75 00 | |
| 60064—Ties ..... | 331 68 | |
| | | $406 68 |

A. O. HOUGHTON, HEASLIP, ONT.

| | | |
|---|---|---|
| 56491—Donation—account cow alleged killed ..... | $20 00 | |
| 63258— " " " ..... | 25 00 | |
| | | $45 00 |

THE HOTEL CEDRIC, COCHRANE, ONT.

| | | |
|---|---|---|
| 56725—Board and lodging—engineering party ..... | $3 50 | |
| 60012— " " " ..... | 13 50 | |
| 60889— " " " ..... | 4 50 | |
| 61113— " " " ..... | 16 50 | |
| | | $38 00 |

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO, TORONTO, ONT.

| | |
|---|---|
| 57241—Lamps ..... | $77 43 |
| 57448— " ..... | 134 03 |
| 57877— " ..... | 102 08 |
| 58374— " ..... | 59 54 |
| 59104— " ..... | 164 16 |
| 60559— " ..... | 83 66 |
| 60748— " ..... | 144 55 |
| 60898— " ..... | 96 17 |
| 61961— " ..... | 51 06 |

HYDRO-ELECTRIC POWER COMMISSION, ETC.—*Continued.*

| | | |
|---|---|---|
| 61518—Lamps | $15 87 | |
| 62268— " | 104 64 | |
| 63015— " | 78 00 | |
| 63328— " | 162 77 | |
| | | $1,273 96 |

HAYES TRACK APPLIANCE COMPANY, RICHMOND, IND.

| | | |
|---|---|---|
| 57243—Operating stands and derails | $111 00 | |
| | | $111 00 |

HAMILTON STAMP & STENCIL WORKS, LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 57245—Rubber stamp | $0 87 | |
| 57450— " | 3 56 | |
| 57893— " and daters | 13 90 | |
| 58368—Daters, stamps, die and ink | 29 39 | |
| 58839—Stamps, daters | 8 26 | |
| 58841— " " | 15 95 | |
| 59094— " " | 4 34 | |
| 60310— " " | 1 36 | |
| 60746—Repairing dater, rubber stamp | 1 31 | |
| 61217—Daters, etc. | 16 74 | |
| 61592—Stamp dater | 18 62 | |
| 61632— " | 15 89 | |
| 63003— " | 15 10 | |
| 62922— " | 1 33 | |
| | | $146 62 |

THE HOLDEN COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 57247—Iron and headlight supplies | $66 92 | |
| 57446—Bridge tyres and headlight material | 829 33 | |
| 57875—Repair parts for headlights | 31 23 | |
| 58364—Headlight parts | 265 82 | |
| 58843— " " | 239 10 | |
| 59102— " " | 391 48 | |
| 60555—Lamps, carbons, etc. | 66 96 | |
| 60762—Iron | 112 74 | |
| 61211—Dynamo doors, complete | 63 60 | |
| 61919—Iron | 19 78 | |
| 61728— " | 59 67 | |
| 63009—Armatures, clutches, etc. | 77 91 | |
| | | $2,224 54 |

GEO. H. HEES & CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57249—Shades | $1 06 | |
| 57444—Horse hair and shades | 31 56 | |
| 57881—Shades and nails | 10 12 | |
| 58370—Shades | 2 44 | |
| 59098—Canvas | 24 82 | |
| 60557—Webbing, lining, etc. | 9 89 | |
| 60909—Twine | 6 82 | |
| 61732—Shades | 2 52 | |
| 63005—Thread, canvas | 40 66 | |
| | | $129 89 |

F. W. HUTT, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 57353—Claim No. 10331—loss account shortage coal | $4 12 | |
| 58006— " No. 10270— " " " | 7 85 | |
| | | $11 97 |

HARRIS ABATTOIR COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57355—Claim No. 10474—overcharge, demurrage and detention charges | $4 00 | |
| 61814— " No. 11060—loss four cases eggs | 33 60 | |
| | | $37 60 |

HAMILTON & COMPANY, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 57357—Claim No. 10268—loss account, shortage and damage to whiskey | $14 07 | |
| 57074— " No. 10506—loss account, one bottle liquor | 1 30 | |
| 58039—Claims Nos. 10016, 10624,-6, 10603—shortage and damage to liquor | 53 16 | |
| 58000— " Nos. 10605, 10619, 10435—loss account, damage to liquor | 16 02 | |
| 58977— " Nos. 10918 and 10855—loss account, damage to liquor | 2 83 | |
| 59392—Claim No. 11019—loss, account damage to liquor | 1 92 | |
| 59799— " No. 10858—loss account, damage to liquor | 2 23 | |
| 60457—Claims Nos. 11271, 11431, 10881—loss and damage to liquor | 7 84 | |
| 60859— " Nos. 11018, 11543—loss account, damage to liquor. | 1 88 | |
| 60933— " Nos. 11595 and 11272—loss of liquor in transit... | 7 31 | |
| 61167— " Nos. 11017, 11598, 11453—loss three bottles whiskey | 7 43 | |
| 61483— " | 28 55 | |
| 61623—Claim No. 11437—loss liquor account, breakage | 3 47 | |
| 61875— " No. 11823—loss, liquor in transit | 10 46 | |
| 62067— " No. 11987—loss, liquor in transit | 70 | |
| 61432— " No. 11842—damage and loss of gin | 9 21 | |
| 61812—Claims | 5 98 | |
| 62042— " | 5 79 | |
| 62643— " Nos. 12458, 12371, 12369—loss liquor | 5 34 | |
| 62558— " Nos. 12366 and 11996—loss liquor | 12 22 | |
| 62896—Claim No. 12456—loss liquor | 9 76 | |
| 63230— " No. 12367—loss account, bottle creme de menthe, broken | 75 | |
| 63686— " No. 11676—loss account, shortage liquor | 2 34 | |
| | | $210 56 |

THE HAMILTON HERALD, HAMILTON, ONT.

| | | |
|---|---|---|
| 56670—Advertising | $20 00 | |
| | | $20 00 |

HOCKING VALLEY RAILWAY COMPANY, COLUMBUS, OHIO.

| | | |
|---|---|---|
| 56876—Car service balance | $7 65 | |
| 58211— " " | 7 65 | |
| 58144— " " | 3 60 | |
| 59287— " " | 37 80 | |
| 59264— " repairs | 26 | |
| 59622— " service balance | 26 10 | |
| 60243— " " | 1 80 | |
| 60504— " " | 11 25 | |
| 61745— " " | 5 40 | |
| 62154— " " | 7 65 | |
| 62857— " " | 24 30 | |
| 63488— " " | 19 80 | |
| | | $153 26 |

C. L. HEATH, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 57076—Claim No. 10246—loss account, damage to canoe | $5 00 | |
| | | $5 00 |

H. Harrison (M. M. Dept.), North Bay, Ont.

| | | |
|---|---|---|
| 57575—Expenses, travelling | $18 90 | |
| 57698— " " | 1 20 | |
| | | $20 10 |

F. H. Hopkins & Co., Montreal, Que.

| | | |
|---|---|---|
| 57879—Hoisting chain and cable, wire rope sheaves | $284 50 | |
| 58690—Part payment on ballast cars | 10,000 00 | |
| 58744—Jordan spreader, Hart convertible cars | 4,530 00 | |
| 59977—Wheelbarrows | 84 00 | |
| 63011—Woodwork for steam shovel | 178 50 | |
| | | $15,077 00 |

Jas. Hylands, Cobalt, Ont.

| | | |
|---|---|---|
| 58037—Claim No. 10597—loss account, damage to fire brick | $0 75 | |
| | | $0 75 |

Mrs. Thos. C. Haley, Wahtaybeag, Ont.

| | | |
|---|---|---|
| 58111—Donation account, pulpwood alleged destroyed | $78 00 | |
| | | $78 00 |

Hamilton Bridge Works Company, Limited, Hamilton, Ont.

| | | |
|---|---|---|
| 58343—Angles | $299 70 | |
| 58372—Car sills, rivets and plates | 382 90 | |
| 59043—Plate and angle | 27 44 | |
| 59100—Plate | 156 98 | |
| 60553— " | 36 90 | |
| 61730—Angles | 69 42 | |
| | | $973 34 |

Frank Hartzke, McCool P.O.

| | | |
|---|---|---|
| 58463—Ties | $107 79 | |
| 60064— " | 124 35 | |
| | | $232 14 |

Max Hartzke, Leeville P.O.

| | | |
|---|---|---|
| 58463—Ties | $83 48 | |
| 58593— " | 49 23 | |
| 58593— " | 46 90 | |
| 59425— " | 50 49 | |
| | | $230 10 |

The Hoyle Lumber Company, Limited, Morrisburg, Ont.

| | | |
|---|---|---|
| 58002—Claim No. 10753—demurrage | $4 00 | |
| 61879— " No. 11854—rebate on siding | 20 00 | |
| | | $24 00 |

Hogg & Lytle, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 58004—Claim No. 10634—overcharge, weight of oats | $4 22 | |
| 60857— " No. 10778—overcharge, weight of peas | 6 63 | |
| | | $10 85 |

John Harrison & Sons Company, Limited, Owen Sound, Ont.

| | | |
|---|---|---|
| 58366—Tie plugs | $70 00 | |
| 61482— " | 70 00 | |
| | | $140 00 |

ROBERT W. HUNT & COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 58376—Inspecting telegraph wire | $15 64 | |
| 59045—Wire inspection | 2 61 | |
| 62270—Inspection structural material | 8 48 | |
| 63013— " bolts | 8 68 | |
| 62920—Track bolts (inspection) | 2 91 | |
| | | $38 32 |

JAMES HEWLETT, TORONTO, ONT.

| | | |
|---|---|---|
| 58539—Premium on Royal insurance policy No. 271813 | $4 20 | |
| | | $4 20 |

JOSEPH HOWE, CAINE P.O., ONT.

| | | |
|---|---|---|
| 58593—Ties | $117 85 | |
| 59425— " | 149 34 | |
| 59425— " | 65 60 | |
| 59754— " | 251 94 | |
| 60064— " | 82 05 | |
| | | $666 78 |

JOSEPH HARTNEY, CAINE P.O., ONT.

| | | |
|---|---|---|
| 58593—Ties | $164 19 | |
| 58593— " | 85 38 | |
| 59425— " | 47 40 | |
| | | $296 97 |

HOWARD HEASLIP, HEASLIP, ONT.

| | | |
|---|---|---|
| 58593—Ties | $61 33 | |
| 59754—Ties | 33 80 | |
| | | $95 13 |

AMOS HEASLIP, HEASLIP, ONT.

| | | |
|---|---|---|
| 58593—Ties | $99 39 | |
| | | $99 39 |

WILLIAM HAYES, KENABEEK P.O., ONT.

| | | |
|---|---|---|
| 58593—Ties | $61 37 | |
| 60064—Ties | 36 10 | |
| | | $97 47 |

HOLLINGER GOLD MINES, LIMITED, TIMMINS, ONT.

| | | |
|---|---|---|
| 58699—Soft coal | $569 18 | |
| 59380—Soft coal | 727 11 | |
| 60848—Charges on car coal | 29 05 | |
| 61221—Coal | 117 93 | |
| | | $1,443 27 |

HILL-CLARK-FRANCIS, LIMITED, SCHUMACHER, ONT.

| | | |
|---|---|---|
| 58891—Claim No. 10772—Account, damage to furniture | $1 25 | |
| | | $1 25 |

GEO. D. HAMILTON, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 58979—Claim No. 10452—Refund demurrage charges | $5 00 | |
| 58826—Claim No. 11079—Siding rebate | 24 00 | |
| | | $29 00 |

GEO. HAWKINS (M.M. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 59025—Expenses—Travelling | $3 50 | |
| 61250—Expenses—Travelling | 2 10 | |
| | | $5 60 |

FORBES HENDRY, ENID P.O., SASK.

| | | |
|---|---|---|
| 59129—Claim No. 11082—Baggage destroyed by fire | $59 60 | |
| | | $59 60 |

JOHN HUTSON, TROUT MILLS, ONT.

| | | |
|---|---|---|
| 59173—Lighting lamps and rent waiting room | $15 00 | |
| | | $15 00 |

ALBERT HOPKINS, PORQUIS P.O., ONT.

| | | |
|---|---|---|
| 59425—Ties | $141 30 | |
| | | $141 30 |

JOHN HOWARD, HEASLIP, ONT.

| | | |
|---|---|---|
| 59425—Ties | $50 81 | |
| 59754—Ties | 28 60 | |
| | | $79 41 |

HOUSTON & TEXAS CENTRAL RAILROAD COMPANY, HOUSTON, TEX.

| | | |
|---|---|---|
| 59517—Car repairs | $1 97 | |
| | | $1 97 |

HEATON'S AGENCY, TORONTO, ONT.

| | | |
|---|---|---|
| 58688—Subscription "Heaton's Annual" | 1 25 | |
| | | $1 25 |

ADAM HALL, PETERBOROUGH, ONT.

| | | |
|---|---|---|
| 58874—Ranges and reservoirs | $67 65 | |
| | | $67 65 |

S. R. HART & COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 58944—Embossed note paper, envelopes | $13 00 | |
| | | $13 00 |

T. E. HICKEY, TIMMINS, ONT.

| | | |
|---|---|---|
| 59394—Claim No. 10093—Loss-acount, shortage, boxes poultry | 27 09 | |
| | | $27 09 |

HERBERT HOWE, CANE P.O., ONT.

| | | |
|---|---|---|
| 59754—Ties | $194 91 | |
| | | $194 91 |

JOSEPH HEASLIP, HEASLIP, ONT.

| | | |
|---|---|---|
| 59754—Ties | $118 20 | |
| | | $118 20 |

DUGALD HALLIDAY, LEEVILLE P.O., ONT.

| | | |
|---|---|---|
| 59754—Ties | $270 45 | |
| | | $270 45 |

THE HAILEYBURIAN, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 59745—Advertisements, "tenders" | $4 80 | |
| 61149— " " | 5 10 | |
| 61122— " " | 4 80 | |
| 62758— " "sale of lots" | 22 80 | |
| | | $37 50 |

MISS ANNA HALL, VIKING, ALTA.

| | | |
|---|---|---|
| 59875—Claim No. 11470—Loss account, baggage burned | $100 00 | |
| | | $100 00 |

A. W. HAWKSHAW, UNO PARK, ONT.

| | | |
|---|---|---|
| 60223—Meals supplied | $5 75 | |
| | | $5 75 |

HAMILTON & TORONTO SEWER PIPE COMPANY, LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 60561—Pipe | $94 60 | |
| 62392—Pipe | 105 39 | |
| | | $199 99 |

O. HERMANT & COMPANY, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 59874—Claim No. 11143—Loss account, damage to potatoes | $6 22 | |
| | | $6 22 |

J. F. HARTZ COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59876—Vials and corks | $0 75 | |
| | | $0 75 |

HUGH HASTINGS, EARLTON P.O., ONT.

| | | |
|---|---|---|
| 60064—Ties | $412 08 | |
| | | $412 08 |

HAUCK MANUFACTURING COMPANY, BROOKLYN, N.Y.

| | | |
|---|---|---|
| 60242—Thawing outfit | $60 00 | |
| | | $60 00 |

HAM & GRANT, ENGLEHART, ONT.

| | | |
|---|---|---|
| 60244—Tea | $4 00 | |
| | | $4 00 |

HARRIMAN & NORTH EASTERN RAILROAD COMPANY, CINCINNATI, O.

| | | |
|---|---|---|
| 60506—Car service balance | $5 40 | |
| 61747—Car service balance | 2 25 | |
| | | $7 65 |

ARTHUR HOUGHTON, BOURKES, ONT.

| | | |
|---|---|---|
| 60664—Award W. C. B. final payment *re* injuries alleged sustained | $12 21 | |
| | | $12 21 |

HAILEYBURY SUPPLY STORE, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 60917—Claim No. 11436—Damage to catsup | $0 80 | |
| 61485—Claim No. 11592—Loss, gross shoe laces | 1 55 | |
| | | $2 35 |

HEYWOOD BROS., & WAKEFIELD COMPANY, BUFFALO, N.Y.

| | | |
|---|---|---|
| 61213—Muslin | $51 20 | $51 20 |

HORTWELL BROS., LIMITED, WALKERVILLE, ONT.

| | | |
|---|---|---|
| 61215—Pick handles | $21 50 | $21 50 |

HAMILTON STOVE & HEATER CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 61219—Key cut to sample | $0 30 | $0 30 |

W. J. HARPER, A. R., & C. A., NORTH BAY, ONT.

| | | |
|---|---|---|
| 61415—Travelling expenses | $3 75 | |
| 61248— " | 2 00 | |
| 62774— " | 1 75 | |
| | | $7 50 |

F. HEASMAN, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 61487—Claim No. 11435—Jar olives broken | $1 25 | |
| 61877— " 12149—Loss account, bottle vinegar | 21 | |
| 61434— " 12400—Loss, can salmon | 36 | |
| 62595— " 12035—Loss, jar catsup | 80 | |
| 62898— " 12140—Loss account, shortage soap | 63 | |
| 63228— " 12989, 12806—Loss pail candy, chimney broken in transit | 3 66 | |
| | | $6 91 |

R. B. HUNTER, FULTON, N.Y.

| | | |
|---|---|---|
| 61625—Claim No. 11711—Overcharge rate, pulpwood | $28 05 | $28 05 |

HENDERSON & ANGUS, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62045—Work performed, Timmins Station | $2,550 00 | |
| 61220— " " | 3,525 38 | |
| 62561— " " | 10,125 62 | |
| 62674— " " | 1,224 00 | |
| | | $17,425 00 |

HOUSTON EAST & WEST TEXAS RAILWAY COMPANY, HOUSTON, TEXAS.

| | | |
|---|---|---|
| 61974—Car repairs | $0 12 | $0 12 |

D. HAMILTON, TORONTO, ONT.

| | | |
|---|---|---|
| 62185—Expenses | $8 84 | $8 84 |

J. R. HORNER, SHAWVILLE, ONT.

| | | |
|---|---|---|
| 62315—Claim No. 12315—Loss, organ in forest fires | $55 00 | $55 00 |

H. S. HENNESSY, HAILEYBURY P.O., ONT.

| | | |
|---|---|---|
| 62669—Ties | $183 04 | $183 04 |

A. L. HERBERT, COBALT, ONT.

| | | |
|---|---|---|
| 63099—Claim No. 11414—Alleged loss coal | $9 70 | $9 70 |

H. Hurwitz, Timmins, Ont.

| | | |
|---|---|---|
| 63187—Claim No. 12010—Alleged damage to glass | $8 00 | |
| | | $8 00 |

Herald Printing Company, New Liskeard, Ont.

| | | |
|---|---|---|
| 62514—Advertisement, "sale of lands" | $15 20 | |
| | | $15 20 |

Indiana Harbor Belt Railroad Company, Cleveland, Ohio.

| | | |
|---|---|---|
| 56519—Car repairs | $9 44 | |
| 57304— " | 29 | |
| 59431— " | 2 28 | |
| 61289— " | 29 | |
| 61906— " | 50 | |
| 63756— " | 2 14 | |
| | | $14 94 |

Irish & Maulson, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 57231—Premium—Fire insurance | $0 90 | |
| 56626— " " | 9,744 50 | |
| 58931— " " | 1 80 | |
| 58946— " " | 400 00 | |
| 61346— " " | 26 87 | |
| 62443— " " | 10 80 | |
| 62716— " " | 20 03 | |
| | | $10,204 90 |

International Seal & Lock Co., Hamilton, Mich.

| | | |
|---|---|---|
| 57251—Tyden seal | $56 57 | |
| 57895—Tyden seal | 58 75 | |
| 58847—Car seals | 58 55 | |
| 60565—Car seals | 56 26 | |
| 62555—Seals | 70 58 | |
| | | $300 71 |

The Imperial Oil Co., Limited, Toronto.

| | |
|---|---|
| 57429—Oil, gasoline, candles | $399 81 |
| 56878—Car service balance | 57 95 |
| 57452—Oil, gasoline and cutting compound | 277 35 |
| 57957—Oil barrels | 423 16 |
| 58215—Car service balance | 28 53 |
| 58008—Claim No. 10835—Siding rebate | 326 00 |
| 58148—Car service balance | 64 16 |
| 58378—Oil, gasoline and barrels | 676 71 |
| 58845—Oil and barrels | 312 72 |
| 59291—Car service balance | 20 14 |
| 59106—Oil, gasoline | 196 25 |
| 59616—Car service balance | 31 10 |
| 60247—Car service balance | 36 20 |
| 60563—Gasoline, grease, etc. | 408 30 |
| 60510—Car service balance | 24 37 |
| 60760—Gasoline, fuel, oil, etc. | 81 62 |
| 61021—Gasoline, oil, barrels | 203 60 |
| 61751—Car service balance | 26 59 |
| 61921—Oil | 87 49 |
| 61178—Land—North Bay Jct. | 2,000 00 |
| 61634—Tank cars | 525 00 |
| 61636—Oil | 36 37 |
| 61734—Oil | 276 11 |
| 62158—Car service balance | 15 70 |
| 62201—Rental offices, September, 1916 | 40 97 |
| 62597—Claim No. 12481—Loss, oven | 2 60 |
| 62861—Car service balance | 3 50 |

THE IMPERIAL OIL COMPANY, LIMITED, TORONTO.—*Continued.*

| | | |
|---|---|---|
| 63017—Oil and gasoline | $89 04 | |
| 62334—Rental offices, October, 1916 | 122 92 | |
| 62928—Oils | 267 58 | |
| 63122— " | 101 06 | |
| 63280— " | 57 90 | |
| 63526—Car service balance | 13 54 | |
| 58043—Claim No. 10483—Loss, oil | 62 66 | |
| | | $7,297 00 |

ILLINOIS CENTRAL RAILROAD COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 57302—Car repairs | $41 49 | |
| 58213—Car service balance | 7 65 | |
| 58317—Ticket balance | 7 28 | |
| 58377—Car repairs | 25 97 | |
| 58146—Car service balance | 76 00 | |
| 58504—Car repairs | 3 30 | |
| 59289—Car service balance | 87 30 | |
| 59266—Car repairs | 11 05 | |
| 59614—Car service balance | 81 85 | |
| 59913—Car repairs | 8 79 | |
| 60245—Car service balance | 149 85 | |
| 59962—Car repairs | 4 22 | |
| 60508—Car service balance | 113 85 | |
| 60630—Ticket balance | 19 42 | |
| 61291—Car repairs | 8 74 | |
| 61749—Car service balance | 48 80 | |
| 61841—Ticket balance | 17 56 | |
| 62156—Car service balance | 46 80 | |
| 62859—Car service balance | 47 60 | |
| 63232—Claim No. 11845—Damage to newsprint | 1 71 | |
| 63490—Car service balance | 28 95 | |
| | | $838 18 |

INTERNATIONAL MALLEABLE IRON CO., LIMITED, GUELPH, ONT.

| | | |
|---|---|---|
| 57454—Castings | $77 60 | |
| 57883—Castings | 19 20 | |
| 58380—Castings and express | 18 45 | |
| 59146—Castings and express on patterns | 4 55 | |
| 60567—Castings | 70 98 | |
| 60246—Castings | 15 48 | |
| 61520—Express on patterns | 30 | |
| 62926—Express on patterns | 30 | |
| 63124—Castings | 14 70 | |
| | | $221 56 |

ILLINOIS SOUTHERN RAILWAY COMPANY, ST. LOUIS, M.O.

| | | |
|---|---|---|
| 58217—Car service balance | $1 35 | |
| 58150— " " | 9 00 | |
| 59293— " " | 4 05 | |
| 60251— " " | 8 10 | |
| 60514— " " | 12 60 | |
| 61753— " " | 2 70 | |
| | | $37 80 |

INTERNATIONAL RAILWAY PUBLISHING CO., LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57908—Advertising in "Canadian Official Railway Guide" | $29 00 | |
| 59175— " " " " | 27 00 | |
| 60654— " " " " | 27 00 | |
| 62714— " " " " | 27 00 | |
| | | $110 00 |

INDEPENDENT PACKING COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 58152—Car service balance | $3 87 | |
| 59618—Car service balance | 3 87 | |
| | | $7 74 |

INDUSTRIAL WORKS, BAY CITY, MICH.

| | | |
|---|---|---|
| 58382—Journal boxes | $34 00 | |
| 60758—Hose, grates | 91 75 | |
| | | $125 75 |

THOS. INGLIS, ENGLEHART, ONT.

| | | |
|---|---|---|
| 58552—Team work | $107 60 | |
| | | $107 60 |

INTERNATIONAL TIME RECORDING CO. OF CANADA, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59047—Daily slips | $4 00 | |
| 61223—Ribbon | 1 25 | |
| 61494—Ribbon | 1 50 | |
| | | $6 75 |

INTERCOLONIAL RAILWAY OF CANADA, MONCTON, N.B.

| | | |
|---|---|---|
| 59449—Commission on westbound business | $0 54 | |
| 60419—Commission on westbound business | 1 58 | |
| | | $2 12 |

INTERNATIONAL & GREAT NORTHERN RAILWAY, HOUSTON, TEXAS.

| | | |
|---|---|---|
| 59268—Car repairs | $6 50 | |
| 60249— " service balance | 7 20 | |
| 60084— " repairs | 11 92 | |
| 60512— " service balance | 17 10 | |
| 61287— " repairs | 10 75 | |
| 62863— " service balance | 4 05 | |
| 63758— " repairs | 2 40 | |
| | | $59 92 |

MRS. J. E. IRELAND, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 59801—Claim No. 8916, loss account damage to mirror | $45 00 | |
| | | $45 00 |

INTERNATIONAL REFINING COMPANY, TULSA, OKLA.

| | | |
|---|---|---|
| 60253—Car service balance | $2 11 | |
| | | $2 11 |

IRON TRADE REVIEW, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 61583—Subscription | $6 00 | |
| | | $6 00 |

IROQUOIS FALLS MERCHANDISE CO., LIMITED, IROQUOIS FALLS, ONT.

| | | |
|---|---|---|
| 61316—Claim No. 12009, alleged loss tomatoes | $0 73 | |
| 62044—Claim No. 11443, loss case tea | 11 79 | |
| | | $12 52 |

INTERSTATE RAILROAD COMPANY, BIG STONE GAP, VA.

| | | |
|---|---|---|
| 61976—Car repairs | $6 04 | |
| | | $6 04 |

ILLINOIS NORTHERN RAILWAY, CHICAGO, ILL.

| | | |
|---|---|---|
| 61978—Car repairs | $0 46 | |
| | | $0 46 |

I.O.D.E. Provincial Chapter of Manitoba, Winnipeg, Man.

| | | |
|---|---|---|
| 62376—Advertising in "Historical Souvenir" | $35 00 | |
| | | $35 00 |

Irwin Auger Bit Company, Wilmington, Ohio.

| | | |
|---|---|---|
| 63126—Bits | $6 72 | |
| | | $6 72 |

International Harvester Co., Limited, Chicago, Ill.

| | | |
|---|---|---|
| 63176—Claim No. 12440, two pieces waggon alleged destroyed | $13 20 | |
| | | $13 20 |

H. N. Joy, South Porcupine, Ont.

| | | |
|---|---|---|
| 56655—Claim No. 10425, damage to barrel pitch | $0 88 | |
| 58045— " " 10541, loss account damage to stove | 1 00 | |
| 62048— " " 12350 and 11732, damage to washboards | 2 52 | |
| | | $4 40 |

D. F. Jones Manufacturing Co., Limited, Gananoque, Ont.

| | | |
|---|---|---|
| 56899—Shovels | $85 01 | |
| 56988—Scoops | 36 52 | |
| 57683—Shovels | 36 54 | |
| 58753— " | 43 84 | |
| 58876— " | 39 66 | |
| 59979— " | 47 60 | |
| 62373—Scoops | 50 16 | |
| | | $339 33 |

The Jackson Press, Kingston, Ont.

| | | |
|---|---|---|
| 57253—Advice books and forms | 165 40 | |
| 57460—Forms and tags | 12 00 | |
| 57897— " | 133 50 | |
| 58384— " | 590 28 | |
| 59049— " | 258 93 | |
| 59108—Letterheads, etc. | 248 56 | |
| 60577—Forms | 460 10 | |
| 60364—Tags, forms, statements | 95 25 | |
| 60792—Check sheets, reports, etc. | 32 50 | |
| 61225—Forms | 279 88 | |
| 61638— " | 161 62 | |
| 61640— " | 323 45 | |
| 63159— " | 719 13 | |
| 62930—Stationery supplies | 306 56 | |
| 63128—Form 1543 | 122 77 | |
| | | $3,909 93 |

D. Johnson, Matheson, Ont.

| | | |
|---|---|---|
| 57359—Claim No. 10,338, loss account shortage tobacco | $22 69 | |
| | | $22 69 |

Don. H. Jacobie, Haileybury, Ont.

| | | |
|---|---|---|
| 57361—Claim No. 10,487, overcharge on tires | $1 66 | |
| 60064—Ties | 8 00 | |
| | | $9 66 |

The Jamieson Meat Co., Limited, Cobalt, Ont.

| | | |
|---|---|---|
| 57431—Meat | $324 42 | |
| 57456—Meat and butter | 91 30 | |
| 57959—Commissary | 96 15 | |

THE JAMIESON MEAT COMPANY, LIMITED, COBALT, ONT.—*Continued.*

| | | |
|---|---|---|
| 60701—Meat | $92 58 | |
| 59888—Claim No. 11,063, loss account shortage herring | 88 | |
| 60756—Meat | 96 51 | |
| 60994— " | 374 53 | |
| 61227— " | 167 90 | |
| 61585— " | 290 91 | |
| 61963— " | 15 00 | |
| | | $1,550 18 |

JONES & MOORE ELECTRIC CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 56672—Columbia dry cells | $1 75 | |
| | | $1 75 |

JAMES & REID, PERTH, ONT.

| | | |
|---|---|---|
| 57899—Snow scraper | $15 00 | |
| 58567—Steel ladder and hooks | 71 16 | |
| | | $86 16 |

WILLIAM JUNOR, TORONTO, ONT.

| | | |
|---|---|---|
| 57901—Dishes | $21 40 | |
| 60312—Supplies "Temagami" | 3 00 | |
| | | $24 40 |

JENCKES MACHINE COMPANY LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 58047—Claim No. 10694, damage to pump | $4 00 | |
| 58010—Claim No. 10600, damage to hoist | 270 42 | |
| | | $274 42 |

COLBORN JOHNSON, KENABEEK, ONT.

| | | |
|---|---|---|
| 58463—Ties | $66 90 | |
| 58593—Ties | 36 60 | |
| | | $103 50 |

JOHN JENKYN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57632—Award, W. C. B., *re* alleged injuries | $5 27 | |
| | | $5 27 |

JONES & GLASSCO, MONTREAL, QUE.

| | | |
|---|---|---|
| 57938—Chain drive | $207 50 | |
| | | $207 50 |

DR. GORDON F. JACKSON, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 59135—Professional service | $20 00 | |
| | | $20 00 |

C. H. JORDON, KENABEEK P.O., ONT.

| | | |
|---|---|---|
| 59425—Ties | $40 06 | |
| 61063— " | 21 80 | |
| 61500— " | 112 35 | |
| | | $174 21 |

H. A. JACKSON, MRS. A. L. JACKSON & PHYLLIS LOGAN, EDMONTON, ALTA.

| | | |
|---|---|---|
| 59877—Claim No. 11458, loss account damage to baggage | $300 00 | |
| | | $300 00 |

ROBERT JARVIS, MCCOOL P.O., ONT.

| | | |
|---|---|---|
| 60064—Ties | $80 43 | |
| | | $80 43 |

D. Johnson, Matheson, Ont.

| | | |
|---|---|---|
| 60248—Provisions supplied | $67 56 | |
| | | $67 56 |

O. F. Jordan Company, Chicago, Ill.

| | | |
|---|---|---|
| 60902—Castings | $2 04 | |
| | | $2 04 |

Julian Sales Leather Goods Company, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 60849—Pass case | $4 00 | |
| | | $4 00 |

Albert John, Leeville, Ont.

| | | |
|---|---|---|
| 61063—Ties | $81 42 | |
| | | $81 42 |

Thomas Johnston, Leeville, Ont.

| | | |
|---|---|---|
| 61063—Ties | $33 00 | |
| | | $33 00 |

J. N. Jamieson, Haileybury, Ont.

| | | |
|---|---|---|
| 61881—Claim No. 11901—damages to couch | $1 50 | |
| | | $1 50 |

Joseph Eli, Cochrane, Ont.

| | | |
|---|---|---|
| 62046—Claim No. 11609—loss bottle pineapple | $1 17 | |
| | | $1 17 |

R. W. Johnson, Kenabeek P.O., Ont.

| | | |
|---|---|---|
| 62669—Ties | $29 82 | |
| | | $29 82 |

J. G. G. Kerry, Toronto, Ont.

| | | |
|---|---|---|
| 56471—Fee as Consulting Engineer—November, 1915 | $83 33 | |
| 56506— " " " —December, 1915 | 83 33 | |
| 57455— " " " —January, 1916 | 83 33 | |
| 57584— " " " —February, 1916 | 83 33 | |
| 58475— " " " —March, 1916 | 83 33 | |
| 58632— " " " —April, 1916 | 83 33 | |
| 59623— " " " —May, 1916 | 83 33 | |
| 59792— " " " —June, 1916 | 83 33 | |
| 60809— " " " —July, 1916 | 83 33 | |
| 61030— " " " —August, 1916 | 83 33 | |
| 62121— " " " —September, 1916 | 83 33 | |
| 62330— " " " —October, 1916 | 83 33 | |
| | | $999 96 |

Kansas City Southern Railway Company, Kansas City, Mo.

| | | |
|---|---|---|
| 56521—Car repairs | $17 99 | |
| 57103— " repairs | 81 53 | |
| 56880— " service balance | 1 35 | |
| 57306— " repairs | 12 02 | |
| 59964— " repairs | 46 | |
| 60516— " service balance | 4 05 | |
| 61293— " repairs | 12 45 | |
| 61755— " service balance | 1 80 | |
| 62865— " service balance | 9 00 | |
| | | $140 65 |

KENTUCKY & INDIANA TERMINAL RAILWAY COMPANY LOUISVILLE, KY.

| | | |
|---|---|---|
| 56625—Car repairs | $1 26 | |
| 57308— " " | 1 82 | |
| 58554— " " | 3 03 | |
| | | $6 11 |

KERRY & CHASE, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 56729—Services *re* Moose Harbour, report and inspection of gas engine | $43 39 | |
| 57874—Travelling expenses (J. G. G. Kerry) | 4 95 | |
| 59451—Service rendered | 411 76 | |
| 60007— " " | 97 65 | |
| 62281— " " | 131 38 | |
| 62516— " " | 360 75 | |
| | | $1,049 88 |

W. J. KELLY, SUPERINTENDENT OF TELEGRAPH AND TELEPHONE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57069—Travelling expenses | $6 55 | |
| 56964— " " | 14 45 | |
| 58266— " " | 8 85 | |
| 58779— " " | 13 60 | |
| 59332— " " | 5 65 | |
| 59947— " " | 17 05 | |
| 60268— " " | 51 35 | |
| 61587— " " | 6 50 | |
| 61396— " " | 7 70 | |
| 62623— " " | 6 30 | |
| 62776— " " | 17 25 | |
| | | $155 25 |

REBECCA KENNEDY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57093—Laundry | $20 49 | |
| 57034a— " | 20 61 | |
| 58109— " | 19 86 | |
| 57940— " | 19 56 | |
| 59565— " | 20 58 | |
| 59752— " | 20 46 | |
| 60511— " | 22 17 | |
| 60794— " | 22 45 | |
| 62091— " | 32 30 | |
| 61954— " | 28 38 | |
| 63229— " | 26 58 | |
| 62688— " | 25 11 | |
| | | $278 55 |

KENNEDY BROTHERS, UTICA, N.Y.

| | | |
|---|---|---|
| 57255—Inserts and memo books | $4 00 | |
| 59110— " " " | 5 00 | |
| 62934— " " " | 2 00 | |
| | | $11 00 |

H. I. KERT, ENGLEHART, ONT.

| | | |
|---|---|---|
| 57080—Claim No. 10347, loss account one bottle whiskey broken in transit | $0 63 | |
| 58012—Claim No. 10666 and 10729, damage to whiskey | 10 75 | |
| 62609—Claim No. 11915, loss liquor | 2 50 | |
| | | $13 88 |

KING EDWARD HOTEL, ENGLEHART, ONT.

| | | |
|---|---|---|
| 57078—Claim No. 10548, loss 1 bottle whiskey | $1 20 | |
| 58041—Claim No. 10665, loss 1 bottle whiskey | 1 58 | |
| 58546—Meals and lodging supplied passengers | 55 12 | |

KING EDWARD HOTEL, ENGLEHART, ONT.—*Continued.*

| | | |
|---|---|---|
| 58991—Claim No. 10791—Loss liquor | $1 08 | |
| 60000—Board supplied engineering party | 3 00 | |
| 60944— " " " | 12 00 | |
| 61318—Claim No. 11916—Loss liquor | 1 97 | |
| 61438—Claims Nos. 12040 and 12202—Loss liquor | 5 19 | |
| 61816—Claim No. 12334—Loss liquor | 1 59 | |
| 62177—Board and lodging supplied engineering party | 4 50 | |
| 63193—Claim No. 12373—Loss liquor | 8 00 | |
| 63378—Claim No. 12497—Loss liquor | 18 18 | |
| | | $113 41 |

THE KNECHTEL FURNITURE CO., LIMITED, HANOVER, ONT.

| | | |
|---|---|---|
| 57462—Desks and arm chair | $36 75 | |
| 57685— " | 18 13 | |
| 58621— " | 50 50 | |
| 59981—Office chairs | 6 62 | |
| 61522—Desk | 23 00 | |
| 62221— " | 24 50 | |
| 62401— " and chair | 50 71 | |
| 62682— " | 24 50 | |
| | | $234 71 |

KING CONSTRUCTION COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 57464—Grates | $15 92 | |
| | | $15 92 |

KEUFFEL & ESSER CO. OF NEW YORK, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57466—Brushes | $0 56 | |
| 57903—Brushes | 13 | |
| | | $0 69 |

THE KANAWHA & MICHIGAN RAILWAY COMPANY, COLUMBUS, O.

| | | |
|---|---|---|
| 58379—Car repairs | $0 21 | |
| | | $0 21 |

THE H. KRUG FURNITURE CO., LIMITED, KITCHENER, ONT.

| | | |
|---|---|---|
| 57800—Chair | $4 56 | |
| 61925— " | 10 40 | |
| 63021— " | 4 40 | |
| 63282— " tilter | 10 65 | |
| | | $30 01 |

D. KORMAN, ENGLEHART, ONT.

| | | |
|---|---|---|
| 57910—Commissary, auxiliary car | $13 69 | |
| 59177—Supplies to auxiliary car | 3 35 | |
| 59472—Supplies to private car | 10 10 | |
| 60368—Commissary | 8 19 | |
| | | $35 33 |

F. G. KIRK, ENGLEHART, ONT.

| | | |
|---|---|---|
| 58490—Award W. C. B., partial settlement account alleged injuries | $123 18 | |
| 58547—Award W. C. B., partial settlement account alleged injuries | 20 53 | |
| | | $143 71 |

D. KERRIGAN, LANDSCAPE GARDENER, ENGLEHART, ONT.

| | | |
|---|---|---|
| 58645—Expenses | $2 60 | |
| 59691— " | 4 05 | |
| 60188— " | 4 35 | |
| 61417— " | 7 55 | |

D. KERRIGAN, LANDSCAPE GARDENER, ENGLEHART, ONT.—*Continued.*

| | | |
|---|---|---|
| 62019—Paris green, hose coupling | $6 08 | |
| 61252—Expenses | 10 53 | |
| 62223— " | 4 25 | |
| 63386— " | 29 45 | |
| | | $68 86 |

TITUS KECINK, COBALT, ONT.

| | | |
|---|---|---|
| 58673—Award W. C. B., *re* alleged injuries | $10 32 | |
| | | $10 32 |

W. K. P. KENNEDY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 58799—Expense *re* Stockdale property | $25 00 | |
| | | $25 00 |

KING'S PRINTER, TORONTO, ONT.

| | | |
|---|---|---|
| 59470—Paper for reports | $29 12 | |
| 62563—Mining industry reports | 38 76 | |
| | | $67 88 |

KALAMAZOO RAILWAY SUPPLY COMPANY, KALAMAZOO, MICH.

| | | |
|---|---|---|
| 60055—Gauge, levels and drills | $50 00 | |
| 60629—Exchange on voucher | 50 | |
| 61708—Pedestal, etc. | 8 20 | |
| | | $58 70 |

M. J. KENNEDY, FERONIA, ONT.

| | | |
|---|---|---|
| 60240—Potatoes | $64 00 | |
| | | $64 00 |

KEYSTONE DRILLER COMPANY, BEAVER FALLS, PA.

| | | |
|---|---|---|
| 61027—Working barrel | $121 00 | |
| | | $121 00 |

A. J. KIRSTIN CANADIAN COMPANY, SAULT STE. MARIE, ONT.

| | | |
|---|---|---|
| 61923—Stump puller | $88 00 | |
| | | $88 00 |

KANSAS CITY, MEXICO & ORIENT RAILROAD, KANSAS CITY, MO.

| | | |
|---|---|---|
| 61980—Car repairs | $33 87 | |
| 62160—Car service balance | 45 | |
| | | $34 32 |

MRS. A. KING, LATCHFORD, ONT.

| | | |
|---|---|---|
| 62181—Board and lodging supplied | $5 20 | |
| | | $5 20 |

KNIGHT BROS., & MCKINNON, LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 62279—Repairing operating table | $0 50 | |
| 62645—Claim No. 12327, loss car flooring and sash in forest fires. | 756 63 | |
| 63161—Lumber | 45 | |
| | | $757 58 |

KENNEDY HARDWARE COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 62649—Claim No. 12413, damage to hardware | $5 10 | |
| | | $5 10 |

GEO. F. KRECK, UNO PARK, ONT.

| | | |
|---|---|---|
| 62707—Lumber | $287 48 | |
| | | $287 48 |

KAUSTINE COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 63019—Kanstine system models | $123 50 | |
| 62932—Kanstine equipment | 421 04 | |
| | | $544 54 |

L. KERT, COCHRANE, ONT.

| | | |
|---|---|---|
| 63191—Claim No. 12133, amount realized on meat sold | $19 53 | |
| | | $19 53 |

KENTWOOD & EASTERN RAILWAY COMPANY, KENTWOOD, LA.

| | | |
|---|---|---|
| 63492—Car service balance | $3 60 | |
| | | $3 60 |

G. W. LEE, COMMISSIONER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56473—Salary as general agent, November, 1915 | $208 33 | |
| 56576—Expenses | 24 70 | |
| 56594—Honorarium to December 31, 1915 | 250 00 | |
| 56508—Salary, December, 1915 | 208 33 | |
| 57457—Salary, January, 1916 | 208 33 | |
| 57627—Expenses | 10 00 | |
| 57586—Salary, February, 1916 | 208 33 | |
| 57676—Expenses | 20 30 | |
| 58477—Salary, March, 1916 | 208 33 | |
| 58499—Honorarium to March 31, 1916 | 250 00 | |
| 58671—Expenses | 25 50 | |
| 58634—Salary, April, 1916 | 208 33 | |
| 58752—Expenses | 17 00 | |
| 59621—Salary, May, 1916 | 208 33 | |
| 59665—Expenses | 23 20 | |
| 59790—Salary, June, 1916 | 208 33 | |
| 59824—Honorarium to June 30, 1916 | 250 00 | |
| 60190—Expenses | 21 70 | |
| 60807—Salary, July, 1916 | 208 33 | |
| 61065—Expenses | 15 00 | |
| 61042—Salary, August, 1916 | 208 33 | |
| 61218—Expenses | 20 45 | |
| 62133—Salary, September, 1916 | 208 33 | |
| 62161—Honorarium to September 30, 1916 | 250 00 | |
| 62195—Expenses | 23 70 | |
| 62283—Disbursements *re* Northern Ontario fires | 73 15 | |
| 62344—Salary, October, 1916 | 208 33 | |
| 62408—Expenses | 22 85 | |
| | | $3,797 51 |

THE LADY MINTO HOSPITAL, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 56561—Annual donation, 1915 | 100 00 | |
| 59137—Service rendered to injured brakeman | 16 70 | |
| 60825—Donation | 500 00 | |
| 62718—Treatment Emile Lorocque | 30 95 | |
| | | $647 65 |

MRS. J. R. LUSH, JACKS LAKE P.O., ONT.

| | | |
|---|---|---|
| 56573—Loss account damage to H. H. goods in transit, claim No. 10021 | $45 00 | |
| | | $45 00 |

THE LABOUR NEWS, HAMILTON, ONT.

| | | |
|---|---|---|
| 56587—Advertising | $15 00 | |
| | | $15 00 |

LEHIGH VALLEY RAILROAD COMPANY, PHILADELPHIA, PA.

| | | |
|---|---|---|
| 56801—Car repairs | $20 93 | |
| 56780—Commission on tickets | 2 56 | |
| 56882—Car service balance | 170 10 | |
| 57062—Claims | 17 48 | |
| 57236—Car repairs | 13 03 | |
| 58219—Car service balance | 80 55 | |
| 58319—Ticket balance | 10 17 | |
| 58381—Car repairs | 6 63 | |
| 57914—Commission on tickets | 92 | |
| 58154—Car service balance | 135 45 | |
| 59295— " " " | 147 60 | |
| 59301— " " " | 25 20 | |
| 59411—Ticket balance | 8 60 | |
| 59519—Car repairs | 2 25 | |
| 59581—Commission on tickets | 1 38 | |
| 59030—Claim | 2 21 | |
| 59620—Car service balance | 252 45 | |
| 60091—Commission on tickets | 1 04 | |
| 60255—Car service balance | 198 45 | |
| 60086—Car repairs | 1 22 | |
| 60370—Commission on tickets | 52 | |
| 60518—Car service balance | 119 25 | |
| 61151—Commission on tickets | 2 00 | |
| 61297—Car repairs | 16 88 | |
| 61757—Car service balance | 76 05 | |
| 61140—Commission on tickets | 2 08 | |
| 61370—Claims | 29 88 | |
| 61984—Car repairs | 18 68 | |
| 62162—Car service balance | 76 50 | |
| 62222—Passenger car mileage | 10 32 | |
| 62471—Commission on tickets | 2 00 | |
| 62867—Car service balance | 104 40 | |
| 63165—Commission on tickets | 78 | |
| 63209—Claims | 54 71 | |
| 63494—Car service balance | 144 90 | |
| 63760—Car repairs | 2 55 | |
| | | $1,759 72 |

LOUISVILLE & NASHVILLE RAILROAD COMPANY, LOUISVILLE, KY.

| | | |
|---|---|---|
| 56803—Car repairs | $0 46 | |
| 57105— " repairs | 27 | |
| 56884— " service balance | 8 10 | |
| 57314— " repairs | 2 46 | |
| 58221— " service balance | 16 65 | |
| 58383— " repairs | 4 56 | |
| 58156— " service balance | 62 00 | |
| 59297— " " " | 102 60 | |
| 59305— " " " | 7 20 | |
| 59272— " repairs | 2 34 | |
| 59622— " service balance | 116 10 | |
| 60033— " repairs | 1 31 | |
| 60257— " service balance | 128 25 | |
| 60090— " repairs | 28 | |
| 60520— " service balance | 56 70 | |
| 61295— " repairs | 59 | |
| 61759— " service balance | 11 70 | |
| 61910— " repairs | 2 34 | |
| 61982— " repairs | 1 38 | |
| 62164— " service balance | 13 90 | |
| 63496— " service balance | 27 45 | |
| 63762— " repairs | 3 04 | |
| | | $569 68 |

R. L. LAMB, CHIEF DESPATCHER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56875—Travelling expenses | $8 30 | |
| 56968— " " | 2 10 | |

R. L. Lamb, Chief Despatcher, North Bay, Ont.—*Continued.*

| | | |
|---|---|---|
| 57634—Travelling expenses | $2 45 | |
| 60103— " " | 5 95 | |
| 60870— " " | 5 00 | |
| 62047— " " | 1 40 | |
| 62505— " " | 4 00 | |
| | | $29 20 |

The Lake Simcoe Ice Supply Co., Limited, Toronto, Ont.

| | | |
|---|---|---|
| 56931—Ice supplied | $2 25 | |
| 56674— " " | 2 25 | |
| 57838— " " | 4 50 | |
| 59093— " " | 2 25 | |
| 59474— " " | 2 25 | |
| 60061— " " | 2 50 | |
| 60658— " " | 2 47 | |
| 61589— " " | 2 47 | |
| 62272— " " | 2 47 | |
| 62709— " " | 1 57 | |
| | | $24 98 |

S. Loisel, Lineman, Cochrane, Ont.

| | | |
|---|---|---|
| 57071—Travelling expenses | $3 50 | |
| 56966— " " | 2 75 | |
| 57729— " " | 4 05 | |
| 58268— " " | 11 55 | |
| 58781— " " | 6 75 | |
| 59334— " " | 9 80 | |
| 59949— " " | 7 45 | |
| 60272— " " | 10 10 | |
| 61531— " " | 9 05 | |
| 61398— " " | 8 00 | |
| 62625— " " | 7 50 | |
| 62778— " " | 4 90 | |
| | | $85 40 |

R. J. Lovell Co., Limited, Toronto, Ont.

| | | |
|---|---|---|
| 57257—Order books | $38 85 | |
| | | $38 85 |

The G. R. Locker Co., Montreal, P.Q.

| | | |
|---|---|---|
| 57259—Gauge glasses | $5 10 | |
| 57905— " " | 6 30 | |
| 58853— " " | 21 12 | |
| 59112— " " | 27 20 | |
| 60766— " " | 33 27 | |
| | | $92 99 |

The Lambton Creamery Co., Limited, Petrolia, Ont.

| | | |
|---|---|---|
| 57261—Butter | $42 75 | |
| 57468— " | 14 40 | |
| 60713— " | 58 90 | |
| 60754— " | 85 55 | |
| 61233— " | 26 10 | |
| 61927— " | 26 10 | |
| 61714— " | 30 15 | |
| 63025— " | 121 05 | |
| 62940— " | 86 40 | |
| 63284— " | 55 35 | |
| | | $546 75 |

LUKENS IRON & STEEL COMPANY, COATSVILLE, PA.

| | | |
|---|---|---|
| 56540—Claim No. 5488—refund of switching charges on steel.... | $350 03 | |
| | | $350 03 |

JOHN W. LECKIE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56560—Awarded W. C. B., *re* alleged injuries received..... | $88 18 | |
| | | $88 18 |

THE LEADER PRINTING COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 56606—Forms..... | $5 00 | |
| 57641— " ..... | 10 00 | |
| | | $15 00 |

LOWE-MARTIN COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 56676—Pressboard folders ..... | $8 50 | |
| 57840—Blue folders ..... | 70 | |
| 58556—White cards ..... | 25 | |
| 58706—Folders..... | 70 | |
| 59438—Blue folders ..... | 3 50 | |
| | | $13 65 |

D. LEROY, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 56628—Award W. C. B., *re* alleged injuries..... | $6 27 | |
| | | $6 27 |

LOUISIANA RAILWAY & NAVIGATION COMPANY, SHREVEPORT, LA.

| | | |
|---|---|---|
| 56886—Car service balance..... | $0 90 | |
| 58158— " " " ..... | 3 15 | |
| 59299— " " " ..... | 6 30 | |
| 59303— " " " ..... | 13 05 | |
| 62166— " " " ..... | 1 80 | |
| 62869— " " " ..... | 3 60 | |
| 63764—Car repairs ..... | 4 01 | |
| | | $32 81 |

LEHIGH & NEW ENGLAND RAILROAD COMPANY, SOUTH BETHLEHEM, PA.

| | | |
|---|---|---|
| 36888—Car service balance..... | $29 25 | |
| 58160— " " " ..... | 11 25 | |
| 59624— " " " ..... | 34 65 | |
| 60259— " " " ..... | 19 20 | |
| 60522— " " " ..... | 12 60 | |
| 61761— " " " ..... | 6 30 | |
| 62168— " " " ..... | 12 60 | |
| 62871— " " " ..... | 9 40 | |
| 63498— " " " ..... | 11 70 | |
| | | $146 95 |

DR. R. C. LOWERY, ENGLEHART, ONT.

| | | |
|---|---|---|
| 57082—Claim No. 10519—refund freight charges on construction material..... | $36 76 | |
| | | $36 76 |

H. LEEMAN, NORTH COBALT, ONT.

| | | |
|---|---|---|
| 57084—Claim No. 10413—loss account damage to cucumbers.... | $3 00 | |
| | | $3 00 |

LOUISIANA & ARKANSAS RAILWAY COMPANY, TEXARKANA, ARK.

| | | |
|---|---|---|
| 57310—Car repairs | $3 82 | |
| 58223—Car service balance | 90 | |
| 58162— " " " | 3 15 | |
| 59626— " " " | 6 75 | |
| 60261— " " " | 7 20 | |
| 60524— " " " | 5 40 | |
| 61763— " " " | 2 25 | |
| | | $29 47 |

LONDON & PORT STANLEY RAILWAY, LONDON, ONT.

| | | |
|---|---|---|
| 57312—Car repairs | $0 26 | |
| | | $0 26 |

E. LEONARD & SONS, LIMITED, LONDON, ONT.

| | | |
|---|---|---|
| 57470—Grate bars | $70 00 | |
| 57907— " " | 2 51 | |
| | | $72 51 |

LINDSAY & MCCLUSKEY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57472—Lime and bags | $3 00 | |
| 57624—Ice | 2,661 12 | |
| 60707—Lime | 35 00 | |
| 63163— " | 60 55 | |
| | | $2,759 67 |

R. LAIDLAW & CO., TORONTO, ONT.

| | | |
|---|---|---|
| 57757—Lumber | $828 77 | |
| 60314— " | 13 50 | |
| 60989— " | 578 28 | |
| 62557— " | 810 19 | |
| 62942—Freight charges | 7 00 | |
| | | $2,237 74 |

LONDON ROLLING MILLS CO., LIMITED, LONDON, ONT.

| | | |
|---|---|---|
| 57909—Swedes iron | $25 95 | |
| | | $25 95 |

WALTER LITTLE, SWASTIKA, ONT.

| | | |
|---|---|---|
| 58115—Hire of team | $21 00 | |
| 60656—Staging and livery hire | 19 00 | |
| 62080—Teaming, with men and tools | 10 50 | |
| | | $50 50 |

W. H. LEWIS, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 57722—Searches | $1 20 | |
| 58506— " | 7 80 | |
| 59747— " | 1 78 | |
| | | $10 78 |

LONDON GUARANTEE & ACCIDENT CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57912—Premium on collective bond | $91 82 | |
| | | $91 82 |

W. R. LOWERY, COBALT, ONT.

| | | |
|---|---|---|
| 58014—Claim No. 10737—shortage 3 lbs. tobacco | $3 21 | |
| 60919— " No. 11260—loss of confectionery | 2 80 | |
| | | $6 01 |

P. J. Lafleur, Earlton, Ont.

| | | |
|---|---|---|
| 58386—Slabwood | $51 00 | |
| 59993—Cutting old timber | 363 25 | |
| 61500—Ties | 180 00 | |
| | | $594 25 |

Mrs. A. Lalonde, North Bay, Ont.

| | | |
|---|---|---|
| 58388—Groceries | $9 94 | |
| 58849— " | 1 86 | |
| 60711— " | 17 40 | |
| 60904— " | 2 62 | |
| 61591— " | 2 35 | |
| 62559— " | 5 21 | |
| | | $39 38 |

La Belle Kirkland Mines, Limited, Kirkland Lake, Ont.

| | | |
|---|---|---|
| 58558—Meals | $17 50 | |
| | | $17 50 |

L. D. Lamarch, Kenabeek P.O., Ont.

| | | |
|---|---|---|
| 58593—Ties | $150 12 | |
| 60064— " | 51 60 | |
| | | $201 72 |

Chas. Laporte, North Bay, Ont.

| | | |
|---|---|---|
| 58609—Ice | $613 80 | |
| 60906—Lumber | 2 20 | |
| | | $616 00 |

E. Lalonde (M. M. Dept.), North Bay, Ont.

| | | |
|---|---|---|
| 58783—Travelling expenses | $10 05 | |
| | | $10 05 |

Dexter P. Lillie Company, Indian Orchard, Mass.

| | | |
|---|---|---|
| 58851—Waste | $151 20 | |
| 59150— " | 226 74 | |
| | | $377 94 |

T. A. Lalonde, Nushka, Ont.

| | | |
|---|---|---|
| 58893—Claim No. 10899—on account demurrage charges | $16 00 | |
| | | $16 00 |

Locomotive Superheater Company, New York, N.Y.

| | | |
|---|---|---|
| 58997—Damper cylinders | $40 00 | |
| | | $40 00 |

Labour Directory, Toronto, Ont.

| | | |
|---|---|---|
| 58802—Advertising | $10 00 | |
| | | $10 00 |

Lake Erie & Western R. R. Company, Indianapolis, Ind.

| | | |
|---|---|---|
| 59270—Car repairs | $9 18 | |
| 60088— " " | 18 29 | |
| 61860— " " | 42 | |
| | | $27 89 |

P. Levine, South Porcupine, Ont.

| | | |
|---|---|---|
| 59396—Claim No. 10683—loss account shortage cowhide..... | $8 78 | |
| | | $8 78 |

E. Lablanc, Timmins, Ont.

| | | |
|---|---|---|
| 59400—Claim No. 10815—loss account 2 bbls. hides destroyed by fire ..... | $17 28 | |
| | | $17 28 |

Louisville, Henderson & St. Louis Ry. Co., Louisville, Ky.

| | | |
|---|---|---|
| 59628—Car service balance..... | $3 60 | |
| | | $3 60 |

Edward Lansall, Bourkes P.O., Ont.

| | | |
|---|---|---|
| 59754—Ties..... | $60 57 | |
| | | $60 57 |

Onesime Laroque, North Bay, Ont.

| | | |
|---|---|---|
| 59639—Settlement *re* alleged injuries—E. Laroque..... | $520 81 | |
| 59641—Further settlement *re* alleged injuries—E. Laroque..... | 75 00 | |
| | | $595 81 |

Miss Annie C. Leckie, Edmonton, Alta.

| | | |
|---|---|---|
| 59879—Claim No. 11505—loss, account baggage burned..... | $100 00 | |
| | | $100 00 |

Lunkenheimer Company, Cincinnati, Ohio.

| | | |
|---|---|---|
| 60631—Relief valve ..... | $2 38 | |
| | | $2 38 |

London Rolling Mill Co., Limited, London, Ont.

| | | |
|---|---|---|
| 60703—Iron..... | $8 70 | |
| | | $8 70 |

Lawson Manufacturing Company, Chicago, Ill.

| | | |
|---|---|---|
| 60705—Hinges..... | $11 95 | |
| 63119— " ..... | 13 65 | |
| | | $25 60 |

L'Air Liquide Society, Toronto, Ont.

| | | |
|---|---|---|
| 60709—Oxygen, acetylene, etc. ..... | $250 00 | |
| 60752—Acetylene freight charges ..... | 12 04 | |
| 61231—Oxygen..... | 15 20 | |
| 61524—Acetylene..... | 10 82 | |
| 61712—Oxygen, acetylene ..... | 32 85 | |
| 62274—Freight charges on cylinders..... | 48 | |
| 63023— " " " ..... | 1 08 | |
| 62938—Oxygen, acetylene, etc..... | 56 24 | |
| 63286— " " ..... | 26 90 | |
| | | $405 61 |

A. La France, North Bay, Ont.

| | | |
|---|---|---|
| 59812—Award W. C. B., final payment *re* alleged injuries..... | $12 81 | |
| | | $12 81 |

W. E. Lane, Silverdale, Ont.

| | | |
|---|---|---|
| 59890—Claim No. 11420—overcharge in rate shipment H.H. goods. | $37 76 | |
| | | $37 76 |

Laurentide Company, Limited, Montreal, Que.

| | | |
|---|---|---|
| 59892—Claims No. 10960 and 10710—loss account damage to newsprint | $5 23 | |
| 60863—Claims No. 10800 and 11179—loss account damage to newsprint | 11 17 | |
| | | $16 40 |

George Lagraw, Cane P.O., Ont.

| | | |
|---|---|---|
| 60064—Ties | $249 63 | |
| 60064— " | 4 29 | |
| | | $253 92 |

John Libby, Cane P.O., Ont.

| | | |
|---|---|---|
| 60064—Ties | $125 43 | |
| | | $125 43 |

F. X. Lafromboise, North Cobalt, Ont.

| | | |
|---|---|---|
| 60064—Ties | $826 77 | |
| | | $826 77 |

Lowe Brothers, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 60138—Paints | $73 01 | |
| 60991— " | 46 69 | |
| 61033— " | 249 66 | |
| 61929— " | 197 44 | |
| 61594— " | 248 47 | |
| 61710— " | 61 25 | |
| 62276—Freight charges | 8 46 | |
| 62403—Paint, oil | 259 65 | |
| 62394—Paint | 48 02 | |
| 62596— " | 123 72 | |
| | | $1,316 37 |

Lyman Tube & Supply Co., Limited, Montreal, P.Q.

| | | |
|---|---|---|
| 60946—Drill | $280 25 | |
| | | $280 25 |

D. Legault, Charlton, Ont.

| | | |
|---|---|---|
| 60861—Claim No. 11231—loss account shortage Quaker oats | $0 47 | |
| 61627— " No. 11852—damage to one lounge | 3 00 | |
| | | $3 47 |

T. H. Leverton, Barbers Bay, Ont.

| | | |
|---|---|---|
| 61229—Lumber | $149 70 | |
| | | $149 70 |

London Concrete Machinery Co., Limited, London, Ont.

| | | |
|---|---|---|
| 61965—Derrick | $120 00 | |
| | | $120 00 |

T. H. Lake, Haileybury, Ont.

| | | |
|---|---|---|
| 62071—Claim No. 10500—alleged loss flour | $1 00 | |
| | | $1 00 |

LIBRARY BUREAU, TORONTO, ONT.

| | | |
|---|---|---|
| 61076—Folders | $4 52 | |
| 62375—Cards | 1 44 | |
| | | $5 96 |

REV. BISHOP LATULIPPE, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 61348—Commission on tickets, excursion | $734 75 | |
| | | $734 75 |

LOUISIANA WESTERN RAILROAD COMPANY, NEW ORLEANS, LA.

| | | |
|---|---|---|
| 61908—Car repairs | $0 37 | |
| 63620— " " | 5 40 | |
| | | $5 77 |

ALEX. LEE, ENGLEHART, ONT.

| | | |
|---|---|---|
| 62278—Meals supplied extra gang | $8 25 | |
| 61350— " " " " | 4 00 | |
| | | $12 25 |

LONDON & PETROLIA BARREL CO., LIMITED, LONDON, ONT.

| | | |
|---|---|---|
| 63121—Kegs | $8 10 | |
| | | $8 10 |

EDGAR LAPOINTE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62358—Award W. C. B., *re* alleged injuries | $3 81 | |
| | | $3 81 |

P. C. LARKIN & COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 62560—Claim No. 12625—alleged loss shipment tea | $34 19 | |
| | | $34 19 |

A. C. LEWIS COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 62936—Repair parts | $24 60 | |
| | | $24 60 |

W. H. MAUND, SECRETARY-TREASURER, TORONTO, ONT.

| | |
|---|---|
| 56463—Salary | $208 33 |
| 56465—Payrolls, Toronto staff | 870 00 |
| 56475— " " | 155 00 |
| 56595— " " | 37 50 |
| 56641—Office expenses | 49 95 |
| 56544— " " | 47 33 |
| 56596—Payrolls, Toronto staff | 870 00 |
| 56598—Salary | 208 33 |
| 56608—Office expenses | 23 10 |
| 56510—Payrolls, Toronto staff | 187 50 |
| 57459—Payrolls, Toronto staff | 187 50 |
| 57473—Salary | 208 33 |
| 57475—Payrolls, Toronto staff | 857 50 |
| 57545—Payrolls, Toronto staff | 24 52 |
| 57557—Office expenses | 41 80 |
| 57588—Payrolls, Toronto staff | 197 50 |
| 57602—Salary | 208 33 |
| 57604—Payrolls, Toronto staff | 812 50 |
| 57680—Office expenses | 55 48 |
| 58479—Payrolls, Toronto staff | 275 08 |

W. H. Maund, Secretary-Treasurer, Toronto, Ont.—*Continued.*

| | | |
|---|---|---|
| 58495—Salary | $208 33 | |
| 58497—Payrolls, Toronto staff | 797 50 | |
| 58523—Office expenses | 45 55 | |
| 58624—Salary | 208 33 | |
| 58626—Payrolls, Toronto staff | 797 50 | |
| 58636—Payrolls, Toronto staff | 364 59 | |
| 58754—Office expenses | 41 00 | |
| 59615—Payrolls, Toronto staff | 370 83 | |
| 59653—Office expenses | 54 55 | |
| 59931—Salary | 208 33 | |
| 59933—Payrolls, Toronto staff | 725 00 | |
| 59788—Payrolls, Toronto staff | 383 95 | |
| 59804—Salary | 208 33 | |
| 59806—Payrolls, Toronto staff | 725 00 | |
| 60066—Office expenses | 45 90 | |
| 60799—Payrolls, Toronto staff | 1,093 33 | |
| 60805—Payrolls, Toronto staff | 367 50 | |
| 60901—Office expenses | 50 00 | |
| 61044—Payrolls, Toronto staff | 367 50 | |
| 61080—Office expenses | 48 96 | |
| 61182—Payrolls, Toronto staff | 1,093 33 | |
| 62135—Payrolls, Toronto staff | 367 50 | |
| 62165—Payrolls, Toronto staff | 1,093 33 | |
| 62187—Office expenses | 45 18 | |
| 62346—Payrolls, Toronto staff | 379 11 | |
| 62442—Office expenses | 49 05 | |
| 62450—Payrolls, Toronto staff | 1,093 33 | |
| | | $16,758 39 |

Municipality of Matheson, Treasurer, Matheson, Ont.

| | | |
|---|---|---|
| 56483—Donation account, grading and opening up streets in Town Matheson | $250 00 | |
| | | $250 00 |

Mobile & Ohio Railroad Company, Mobile, Ala.

| | | |
|---|---|---|
| 56523—Car repairs | $8 85 | |
| 56967— " " | 7 32 | |
| 57240— " " | 2 05 | |
| 58233— " service balance | 16 20 | |
| 58391— " repairs | 51 | |
| 58172— " service balance | 28 80 | |
| 59317— " " " | 44 10 | |
| 59521— " repairs | 1 03 | |
| 59284— " " | 1 98 | |
| 59640— " service balance | 39 60 | |
| 60273— " " " | 36 90 | |
| 60536— " " " | 30 15 | |
| 61385— " repairs | 96 | |
| 61771— " service balance | 30 60 | |
| 61994— " repairs | 15 70 | |
| 62176— " service balance | 7 20 | |
| 62879— " " " | 15 75 | |
| 63506— " " " | 14 40 | |
| | | $302 10 |

The Missouri Pacific Railway Company, St. Louis, Mo.

| | | |
|---|---|---|
| 56525—Car repairs | $15 12 | |
| 56969— " " | 4 72 | |
| 57242— " " | 5 20 | |
| 58387— " " | 5 83 | |
| 59274— " " | 20 06 | |

THE MISSOURI PACIFIC RAILWAY COMPANY, ST. LOUIS, MO.—*Continued.*

| | | |
|---|---|---|
| 59632—Car service balance | $61 20 | |
| 60035— " repairs | 11 98 | |
| 60265— " service balance | 26 10 | |
| 60096— " repairs | 3 61 | |
| 60528— " service balance | 2 25 | |
| 61303— " repairs | 2·65 | |
| 61986— " " | 14 33 | |
| 62026— " " | 14 87 | |
| 62873— " service balance | 37 80 | |
| 63500— " " " | 19 05 | |
| | | $244 77 |

THE MINNEAPOLIS & ST. LOUIS RAILROAD COMPANY, MINNEAPOLIS, MINN.

| | | |
|---|---|---|
| 56527—Car repairs | $19 21 | |
| 57113—Car repairs | 2 80 | |
| 57316—Car repairs | 65 | |
| 58174—Car service balance | 2 75 | |
| 59319—Car service balance | 22 50 | |
| 59280—Car repairs | 17 06 | |
| 59642—Car service balance | 8 55 | |
| 61307—Car repairs | 1 17 | |
| 61102— " | 1 96 | |
| 61914— " | 2 21 | |
| | | $78 86 |

MICHIE & COMPANY, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56605—Supplies for private car | $113 54 | |
| 56733— " " | 4 91 | |
| 56847— " " | 28 04 | |
| 56570— " " | 5 82 | |
| 58117— " " | 30 66 | |
| 58574— " " | 8 83 | |
| 59476— " " | 5 32 | |
| 60009— " " | 16 87 | |
| 60004— " " | 8 29 | |
| 60837— " " | 14 17 | |
| 60891— " " | 20 55 | |
| 61282— " " | 12 42 | |
| 62287— " " | 15 80 | |
| 62982— " " | 27 34 | |
| | | $312 56 |

J. MURPHY, TORONTO.

| | | |
|---|---|---|
| 56643—Subscription to *Telegram*, *News* and *Star* | $7 50 | |
| | | $7 50 |

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE RAILWAY COMPANY, MINNEAPOLIS, MINN.

| | |
|---|---|
| 56657—Claims | $22 51 |
| 57109—Car repairs | 1 41 |
| 56890—Car service balance | 2 25 |
| 57088—Claims | 11 32 |
| 56946—Ticket balance | 75 73 |
| 58051—Claim | 1 86 |
| 58225—Car service balance | 5 40 |
| 58256—Car service balance | 1 15 |
| 58901—Claims | 3 13 |
| 59307—Car service balance | 2 25 |
| 59282—Car repairs | 8 23 |
| 59630—Car service balance | 27 00 |
| 59803—Claims | 6 48 |
| 60039—Car repairs | 3 28 |
| 60263—Car service balance | 22 50 |
| 59896—Claim | 3 84 |
| 60092—Car repairs | 9 93 |

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE RAILWAY, ETC.—*Continued.*

| | | |
|---|---|---|
| 60526—Car service balance | $33 30 | |
| 60937—Claim | 5 50 | |
| 61765—Car service balance | 5 40 | |
| 61990—Car repairs | 16 32 | |
| 62170—Car service balance | 31 05 | |
| 63101—Claims | 22 11 | |
| 62900—Claims | 9 73 | |
| 63768—Car repairs | 5 67 | |
| | | $337 35 |

THOS. J. MEAGHER, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 56731—Registration of lien on contract | $0 15 | |
| | | $0 15 |

A. E. MALLETTE, COCHRANE, ONT.

| | | |
|---|---|---|
| 56783—Repairing typewriter | $3 00 | |
| | | $3 00 |

A. T. MOTH, LOCOMOTIVE FOREMAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56877—Travelling expenses | $1 75 | |
| | | $1 75 |

MICHIGAN CENTRAL RAILROAD COMPANY, DETROIT, MICH.

| | | |
|---|---|---|
| 56971—Car repairs | $19 77 | |
| 57111— " | 5 96 | |
| 57220— " | 19 66 | |
| 58049—Claim No. 10132—Overcharge rate, structural material | 28 45 | |
| 58321—Ticket balance | 4 33 | |
| 58393—Car repairs | 7 35 | |
| 58258—Car service balance | 17 82 | |
| 59413—Car service balance | 6 66 | |
| 59276—Car repairs | 74 | |
| 60423— " | 33 50 | |
| 61301— " | 2 70 | |
| 61862— " | 34 87 | |
| 63622— " | 169 82 | |
| 63766— " | 82 | |
| | | $352 45 |

MISSOURI, KANSAS & TEXAS RAILWAY, ST. LOUIS, MO.

| | | |
|---|---|---|
| 56973—Car repairs | $0 36 | |
| 56892—Car service balance | 11 25 | |
| 58231—Car service balance | 13 95 | |
| 58323—Ticket balance | 23 86 | |
| 58102—Car repairs | 7 18 | |
| 58170—Car service balance | 28 80 | |
| 59315— " " | 44 55 | |
| 59638— " " | 18 90 | |
| 59740—Ticket balance | 23 86 | |
| 60271—Car service balance | 20 70 | |
| 60381— " " | 15 24 | |
| 60094—Car repairs | 25 73 | |
| 60534—Car service balance | 2 70 | |
| 61769— " " | 21 15 | |
| 61912—Car repairs | 91 | |
| 62174—Car service balance | 31 05 | |
| 62877— " " | 29 70 | |
| 63772—Car repairs | 6 92 | |
| | | $326 81 |

THE MAIL & EMPIRE, TORONTO.

| | | |
|---|---|---|
| 57027—Subscription | $3 00 | |
| 57956—Advertising | 9 00 | |
| 58784— " | 84 | |
| 59749— " | 1 64 | |
| | | $14 48 |

W. MEADOWS, FERONIA, ONT.

| | | |
|---|---|---|
| 57183—Wood and car stakes | $23 50 | |
| | | $23 50 |

MAINE CENTRAL RAILROAD COMPANY, PORTLAND, ME.

| | | |
|---|---|---|
| 57107—Car repairs | $0 23 | |
| 58227—Car service balance | 45 | |
| 58389—Car repairs | 1 15 | |
| 58164—Car service balance | 18 00 | |
| 59309— " " | 19 35 | |
| 59278—Car repairs | 34 | |
| 59634—Car service balance | 14 40 | |
| 60267— " " | 3 60 | |
| 60530— " " | 15 15 | |
| 61299—Car repairs | 12 19 | |
| 61767—Car service balance | 33 75 | |
| 61372—Claim No. 10745—Overcharge freight, car sulphur | 57 78 | |
| 61992—Car repairs | 2 07 | |
| 62172—Car service balance | 23 40 | |
| 62875— " " | 78 30 | |
| 62520—Depreciated value, M.C. box car 30028 | 786 41 | |
| 63502—Car service balance | 4 50 | |
| 63770—Car repairs | 37 | |
| | | $1,071 44 |

W. L. MACKIE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57181—Mattresses | $27 00 | |
| 57925— " | 11 25 | |
| 60635— " | 254 10 | |
| 61971— " | 2 50 | |
| 61736— " | 10 00 | |
| | | $304 85 |

GEO. MAITLAND, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57263—Roofing material | $261 40 | |
| | | $261 40 |

MEAKINS & SONS, LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 57265—Dusters | $8 00 | |
| 57480—Brushes, dusters, knives | 50 50 | |
| 57915—Sash, tools and brushes | 25 49 | |
| 58394—Knives, brushes, tools, dusters, etc. | 37 86 | |
| 58855—Dusters and brushes | 151 42 | |
| 59120—Brushes | 15 00 | |
| 60637—Brushes, knives, etc. | 63 65 | |
| 60910—Brushes, dusters | 67 59 | |
| 60750—Brushes, tools, etc. | 58 79 | |
| 61931—Brushes, mottlers, etc. | 69 97 | |
| 63123—Dusters, knives, brushes | 112 24 | |
| 63294—Dusters, tools, etc. | 10 60 | |
| | | $671 11 |

G. P. MURPHY, OTTAWA, ONT.

| | | |
|---|---|---|
| 57267—Lumber | $271 72 | |
| | | $271 72 |

MINING CORPORATION OF CANADA, LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 57295—Claim No. 7777—Overcharge on shipment of silver ore .. | $157 08 | |
| 58020—Claim No. 10677—Overcharge in rate, wood pipe ..... | 43 82 | |
| | | $200 90 |

THE JAMES MORRISON BRASS MANUFACTURING CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 57269—Fittings ..... | $38 67 | |
| 57478— " ..... | 115 93 | |
| 57913— " ..... | 125 30 | |
| 58400— " ..... | 280 86 | |
| 58933—Delivery tubes, valves, etc. ..... | 91 13 | |
| 59148—Valves, nozzles, tubes, etc. ..... | 293 48 | |
| 60639—Injector, gauges, etc. ..... | 56 77 | |
| 60764—Valves, primers, etc. ..... | 272 74 | |
| 60908—Valves, discs ..... | 119 47 | |
| 61335—Valves, globes, etc. ..... | 132 80 | |
| 61969—Valves, nozzles, tubes ..... | 108 68 | |
| 63127—Discs, valves, tubes, etc. ..... | 245 47 | |
| 62646—Line checks, steam valves, etc. ..... | 43 45 | |
| 62946—Valves and radium discs ..... | 83 77 | |
| 63292—Loco. steam gauge, etc. ..... | 27 86 | |
| | | $2,036 38 |

R. C. MILLER OIL SUPPLY CO., MONTREAL, QUE.

| | | |
|---|---|---|
| 57363—Claim No. 10339—Amount realized on shipment refused and sold by agent, Thornloe ..... | $1 90 | |
| | | $1 90 |

MASSEY-HARRIS CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 57365—Claims Nos. 10429 and 10414—Overcharge rate, sleigh parts ..... | $1 20 | |
| | | $1 20 |

MORROW & BEATTY, LIMITED, IROQUOIS FALLS, ONT.

| | | |
|---|---|---|
| 57367—Claim No. 10360—Loss account, shortage on bundle hyrib | $6 30 | |
| 59856—Settlement *re* alleged damage, engine ..... | 950 00 | |
| 60865—Claim No. 11447—Overcharge rate, shipment oil ..... | 98 | |
| | | $957 28 |

GEO. J. MOORE, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 57369—Claim No. 10433—Loss account, damage to chairs ..... | $1 75 | |
| | | $1 75 |

DENNIS MURPHY, OTTAWA, ONT.

| | | |
|---|---|---|
| 56520a—Honorarium to Dec. 31, 1915 ..... | $250 00 | |
| 56562—Travelling expenses ..... | 114 50 | |
| 58501—Honorarium to March 31, 1916 ..... | 250 00 | |
| 59826— " to June 30, 1916 ..... | 250 00 | |
| 62163— " to Sept. 30, 1916 ..... | 250 00 | |
| | | $1,114 50 |

THE MONETARY TIMES PRINTING CO. OF CANADA, TORONTO.

| | | |
|---|---|---|
| 56678—Subscription ..... | $3 00 | |
| 57479—Advertising ..... | 50 00 | |
| | | $53 00 |

MIGHT DIRECTORIES, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56680—Press clippings ..... | $0 45 | |
| 57678—Directory, 1916 ..... | 10 00 | |
| 58508—Press clippings ..... | 20 | |

MIGHT DIRECTORIES, LIMITED, TORONTO.—*Continued.*

| | | |
|---|---|---|
| 59179—Press clippings | $0 70 | |
| 59721— " " | 2 17 | |
| 60011— " " | 35 | |
| 60316— " " | 75 | |
| 62280— " " | 45 | |
| 63167— " " | 10 | |
| 63454— " " | 10 | |
| | | $15 27 |

MILTON HERSEY CO., LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 56782—Analysis of coal | $7 50 | |
| 58550— " " | 15 00 | |
| 58929— " " | 15 00 | |
| | | $37 50 |

D. MITCHELL, ENGLEHART, ONT.

| | | |
|---|---|---|
| 56784—Cartage | $3 00 | |
| 61063—Ties | 79 86 | |
| | | $82 86 |

THE MINERAL SPRINGS, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56786—Water | $6 00 | |
| 58443— " | 2 50 | |
| 57842— " | 2 50 | |
| 59139— " | 2 50 | |
| 58912— " | 2 00 | |
| 60091— " | 2 50 | |
| 61539— " | 4 50 | |
| | | $22 50 |

THE MONTREAL STAR PUBLISHING CO., LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 56788—Advertising | $1 50 | |
| 57846— " | 1 50 | |
| 59453— " | 1 59 | |
| | | $4 59 |

METHODIST BOOK & PUBLISHING HOUSE, TORONTO, ONT.

| | | |
|---|---|---|
| 56792—Forms | $16 00 | |
| 60063—Printing annual report | 40 95 | |
| 61456—Printing Mining Industry report | 21 80 | |
| | | $78 75 |

MISSOURI & NORTH ARKANSAS RAILROAD, HARRISON, ARK.

| | | |
|---|---|---|
| 56894—Car service balance | $8 55 | |
| 58235—Car service balance | 4 95 | |
| | | $13 50 |

GEO. E. MARSTERS, BOSTON, MASS.

| | | |
|---|---|---|
| 57186—Proportion commission on tickets | $0 62 | |
| | | $0 62 |

R. L. MALKIN, NELLIE LAKE, ONT.

| | | |
|---|---|---|
| 57188—Slabs | $45 21 | |
| 57190—Slabs | 68 79 | |
| | | $114 00 |

MUSCATINE NORTH & SOUTH RAILWAY COMPANY, MUSCATINE, IOWA.

| | | |
|---|---|---|
| 57238—Car repairs | $3 12 | |
| 58385— " " | 6 07 | |
| 61305— " " | 4 22 | |
| | | $13 41 |

MARSH & TRUMAN LUMBER COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 57474—White oak lumber | $180 26 | |
| 58398—Lumber and war tax | 275 81 | |
| 60579—White oak | 94 67 | |
| 60796—Oak | 346 78 | |
| 61738—Lumber | 488 29 | |
| | | $1,385 81 |

JOHN MORROW SCREW & NUT COMPANY, LIMITED, INGERSOLL, ONT.

| | | |
|---|---|---|
| 57476—Screws | $2 01 | |
| 57923— " | 2 76 | |
| 58390— " | 2 47 | |
| 58935— " | 1 88 | |
| 59118— " | 20 08 | |
| 61025— " | 27 57 | |
| 61742— " | 6 23 | |
| | | $63 00 |

R. H. MITCHELL, AUDITOR AND CAR ACCOUNTANT, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57547—Travelling expenses | $16 45 | |
| 58681—Travelling expenses | 4 00 | |
| 58786—Disbursement *re* claim No. 10974, Samuel Reid | 85 00 | |
| 58806—Travelling expenses | 15 20 | |
| 59951—Travelling expenses | 19 20 | |
| | | $139 85 |

MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57713—Subscription "Can. Machinery" | $2 00 | |
| 62477—Subscription "Can. Machinery" | 2 00 | |
| | | $4 00 |

W. H. MINER, CHICAGO, ILL.

| | | |
|---|---|---|
| 57911—Castings | $148 00 | |
| 60581—Vertical thimbles | 20 00 | |
| 63131—Friction buffer | 480 00 | |
| 62644—Miner friction gear | 80 00 | |
| | | $728 00 |

MORTON, PHILLIPS & CO., MONTREAL, P.Q.

| | | |
|---|---|---|
| 57917—Customs tariff | $1 07 | |
| | | $1 07 |

WILLIAM MANN COMPANY, PHILADELPHIA, PA.

| | | |
|---|---|---|
| 57919—Tissue books | $8 75 | |
| 61237—Stationery | 11 25 | |
| | | $20 00 |

MASTER CAR BUILDERS' ASSOCIATION, CHICAGO, ILL.

| | | |
|---|---|---|
| 57921—M. C. B. rules | $0 25 | |
| 58392—M. C. B. rules | 4 90 | |
| 59122—Interchange rules | 50 | |
| 62944—M. C. B. rules | 2 90 | |
| | | $8 55 |

METROPOLITAN ENGINEERING COMPANY OF CANADA, TORONTO, ONT.

| | | |
|---|---|---|
| 57927—Electrical goods | $57 00 | |
| | | $57 00 |

MONTEITH PULP & TIMBER COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57953—Claim No. 10633, overcharge weight pulpwood | $16 18 | |
| | | $16 18 |

MONTOUR RAILROAD, PITTSBURG, PA.

| | | |
|---|---|---|
| 58229—Car service balance | $7 65 | |
| 58168— " " " | 10 80 | |
| 59636— " " " | 23 40 | |
| 60269— " " " | 24 30 | |
| 63504— " " " | 5 40 | |
| | | $71 55 |

HENRY MICHIE, ELK LAKE, P.O.

| | | |
|---|---|---|
| 58463—Ties | $63 55 | |
| 60064—Ties | 36 20 | |
| | | $99 75 |

E. N. MAY, TORONTO, ONT.

| | | |
|---|---|---|
| 57606—Advance on salary | $45 00 | |
| | | $45 00 |

W. R. MAHER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57610—Advance on travelling expenses | $200 00 | |
| 58505—Travelling expenses | 154 90 | |
| 59248— " " | 155 40 | |
| 59833— " " | 44 85 | |
| 61400— " " | 24 10 | |
| 62145— " " | 4 95 | |
| 62509— " " | 37 45 | |
| | | $621 65 |

MARSHALL ECCLESTONE, LIMITED, TIMMINS, ONT.

| | | |
|---|---|---|
| 57642—Refund of over-deposit on siding | $73 99 | |
| 57644—Refund of over-deposit on siding | 41 29 | |
| 61171—Claim No. 10387, loss account damage to wall plaster | 55 94 | |
| | | $171 22 |

THE MINES PUBLISHING COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57844—Advertising "Canadian Mining Manual" | $15 00 | |
| 58910—Advertising "Canadian Mining Manual" | 11 00 | |
| | | $26 00 |

MAP SPECIALTY COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 57958—Maps, drawings, etc. | $39 30 | |
| | | $39 30 |

W. MIDDLEDITCH, SAULT STE. MARIE, ONT.

| | | |
|---|---|---|
| 58016—Claim No. 10715, loss account damage to glass | $4 32 | |
| | | $4 32 |

MATHESON SUPPLY COMPANY, MATHESON, ONT.

| | | |
|---|---|---|
| 58018—Claim No. 10654, loss account shortage 1 case Quaker oats | $3 90 | |
| 62050—Claim No. 12012, loss bottle extract | 87 | |
| | | $4 77 |

MINNEAPOLIS, ST. PAUL, ROCHESTER & DUBUQUE ELECTRIC TRACTION COMPANY, MINNEAPOLIS, MINN.

| | | |
|---|---|---|
| 58176—Car service balance | $11 25 | |
| 59321— " " " | 1 35 | |
| 60277— " " " | 45 | |
| 60538— " " " | 1 35 | |
| | | $14 40 |

MILLER CHEMICAL ENGINE COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 58396—Recharges for fire extinguishers | $10 50 | |
| 61740—Transfers for new Miller No. 8 | 5 00 | |
| | | $15 50 |

MRS. M. E. MILTON, TIMMINS, ONT.

| | | |
|---|---|---|
| 58895—Claim No. 10656, damage to furniture | $3 60 | |
| | | $3 60 |

MUSSENS, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 58937—Car replacers | $32 00 | |
| 60633—Castings, wheels | 31 25 | |
| 60948—Parts for drill | 4 75 | |
| 63133—Drills | 18 45 | |
| | | $86 45 |

A. P. MONETTE, TORONTO, ONT.

| | | |
|---|---|---|
| 59027—Deduction in error, for uniforms | $9 45 | |
| | | $9 45 |

MONTOUR RAILROAD, PITTSBURG, PA.

| | | |
|---|---|---|
| 59311—Car service balance | $23 85 | |
| 60532—Car service balance | $5 40 | |
| | | $29 25 |

MANISTEE & NORTH EASTERN RAILROAD COMPANY, MANISTEE, MICH.

| | | |
|---|---|---|
| 59523—Car repairs | $0 24 | |
| | | $0 24 |

MACDONALD, SHEPLEY & COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 58644—Final settlement *re* alleged injuries received, E. Koptonchuk | $600 00 | |
| | | $600 00 |

THE MIDVALE STEEL COMPANY, PHILADELPHIA, PA.

| | | |
|---|---|---|
| 58664—Tires | $1,496 78 | |
| 59124—Tires | 848 35 | |
| | | $2,345 13 |

THE MONTREAL LOCOMOTIVE WORKS, LIMITED, NEW YORK, N.Y.

| | | |
|---|---|---|
| 59114—Frame foot plates | $124 00 | |
| | | $124 00 |

MORSE TWIST DRILL & MACHINE COMPANY, NEW BEDFORD, MASS.

| | | |
|---|---|---|
| 59116—Staybolt tap | $4 62 | |
| | | $4 62 |

MACKENZIE & COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 59478—Framing photo | $2 50 | |
| 60168—Mounting and framing honor roll | 4 50 | |
| | | $7 00 |

MIDLAND VALLEY RAILROAD, MUSKOGEE, OKLA.

| | | |
|---|---|---|
| 59644—Car service balance | $1 35 | |
| 60275—Car service balance | 1 80 | |
| | | $3 15 |

WM. METCALF (M.P. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 59853—Travelling expenses | $0 50 | |
| 61148—Award W. C. B., *re* alleged injuries | 22 20 | |
| | | $22 70 |

MAJOR MILNE, O.C. 159TH BATTALION, NORTH BAY, ONT.

| | | |
|---|---|---|
| 59941—Commission, special train | $117 90 | |
| | | $117 80 |

MISSOURI, OKLAHOMA & GULF RAILWAY COMPANY, MUSKOGEE, OKLA.

| | | |
|---|---|---|
| 60037—Car repairs | $3 79 | |
| 61988—Car repairs | 93 | |
| | | $4 72 |

ARTHUR MONAHAN, MATHESON, ONT.

| | | |
|---|---|---|
| 60421—Water supplied | $3 50 | |
| | | $3 50 |

MISSOURI, KANSAS & TEXAS RAILWAY OF TEXAS (RECEIVERS), DALLAS, TEXAS.

| | | |
|---|---|---|
| 60425—Car repairs | $0 79 | |
| 62479—Car repairs | 3 39 | |
| | | $4 18 |

WALTER MATTHEWS, BUFFALO, N.Y.

| | | |
|---|---|---|
| 60443—Claim No. 11417—Loss account, damage to suit case | $4 00 | |
| | | $4 00 |

J. P. MCVICAR, INWOOD, ONT.

| | | |
|---|---|---|
| 60583—Hay | $157 65 | |
| 60950—Hay | 183 09 | |
| | | $340 74 |

MALICK & BALON, TIMMINS, ONT.

| | | |
|---|---|---|
| 59894—Claim No. 11266—Loss account, fruit damaged by frost | $11 00 | |
| | | $11 00 |

MORGANTOWN & KINGWOOD RAILROAD COMPANY, MORGANTOWN, W. VA.

| | | |
|---|---|---|
| 59966—Car repairs | $1 32 | |
| | | $1 32 |

H. MARLEAU, NORTH BAY, ONT.

| | | |
|---|---|---|
| 60002—Moving building, N. Bay Jct. | $220 00 | |
| | | $220 00 |

WILLIAM MILLS, HEASLIP P.O., ONT.

| | | |
|---|---|---|
| 60064—Ties | $32 76 | |
| | | $32 76 |

E. M. MURPHY, RELIEVING AGENT, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 60274—Travelling expenses | $7 00 | |
| 61070— " | 26 00 | |
| 62458— " | 14 00 | |
| 63388— " | 14 00 | |
| | | $61 00 |

MAXWELL'S, LIMITED, ST. MARY'S, ONT.

| | | |
|---|---|---|
| 60372—Lawn mowers | $32 50 | |
| 61967—Repairs to lawn mower | 1 10 | |
| | | $33 60 |

FRED. MATHIEAU, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 60460—Claim No. 10755—Loss account, shortage case hardware. | $12 00 | |
| | | $12 00 |

JOHN MARSH, CHICAGO, ILL.

| | | |
|---|---|---|
| 60935—Claim No. 10031—Overcharge, freight on cars | $28 50 | |
| | | $28 50 |

W. MIDDLETON, WABUN, ONT.

| | | |
|---|---|---|
| 61063—Ties | $81 96 | |
| 61063— " | 39 87 | |
| 61063— " | 19 83 | |
| | | $141 66 |

D. MIDDLETON, WABUN P.O., ONT.

| | | |
|---|---|---|
| 61063—Ties | $140 07 | |
| | | $140 07 |

C. J. MORGAN, HANBURY P.O., ONT.

| | | |
|---|---|---|
| 61063—Ties | $41 25 | |
| | | $41 25 |

R. L. & C. MALKIN, NELLIE LAKE P.O.

| | | |
|---|---|---|
| 61063—Ties | $55 62 | |
| | | $55 62 |

ALBERT MORAN, ASQUITH, SASK.

| | | |
|---|---|---|
| 61461—Claim No. 12155—Loss account, baggage burned | $100 00 | |
| 62599—Claim No. 12155—Loss account, baggage burned | 105 10 | |
| | | $205 10 |

R. S. MARSHALL, RELIEVING AGENT, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61537—Travelling expenses | $61 00 | |
| 61352— " | 26 00 | |
| 62507— " | 26 75 | |
| 63456— " | 27 00 | |
| | | $140 75 |

MIDDLETOWN, UNIONVILLE RAILROAD, MIDDLETOWN, N.Y.

| | | |
|---|---|---|
| 61773—Car service balance | $0 90 | |
| 62881—Car service balance | 2 25 | |
| | | $3 15 |

H. H. MACLEAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61142—Meals for fire sufferers | $24 50 | |
| | | $24 50 |

J. E. MORIN, COBALT, ONT.

| | | |
|---|---|---|
| 61416—Claim No. 11805—Alleged damage to H. H. goods | $13 75 | |
| | | $13 75 |

WM. MILNE & SON, LIMITED, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61596—Lath | $162 00 | |
| 63129— " | 27 00 | |
| 62948— " | 126 00 | |
| | | $315 00 |

A. M. MASON, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 61642—Wood | $8 00 | |
| 62409—Wood | 8 00 | |
| | | $16 00 |

J. F. MULLIGAN, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 61818—Claim No. 12293, alleged damage to suit case | $1 10 | |
| | | $1 10 |

MONONGAHELA RAILWAY COMPANY, PITTSBURG, PA.

| | | |
|---|---|---|
| 61864—Car repairs | $1 52 | |
| 61916—Car repairs | 8 43 | |
| | | $9 95 |

MACON, DUBLIN & SAVANAH RAILROAD COMPANY, MACON, GA.

| | | |
|---|---|---|
| 61918—Car repairs | $0 12 | |
| | | $0 12 |

HARRY MARTIN, INSPECTOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62265—Travelling expenses | $15 50 | |
| 62614—Travelling expenses | 33 00 | |
| | | $48 50 |

W. A. MARTYN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62285—Force account *re* machine shop addition | $36 06 | |
| 62405—Cert. No. 1, North Bay machine shop | 528 02 | |
| 63125—Brick | 412 50 | |
| 63288—Brick | 396 00 | |
| | | $1,372 58 |

MASON & CAMPBELL, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62407—Air pipe for blacksmith shop | $97 00 | |
| | | $97 00 |

JAMES MURPHY, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 62473—Material and labour | $13 50 | |
| | | $13 50 |

MURRAY-KAY, LIMITED, TORONTO.

| | | |
|---|---|---|
| 62518—Polishing floors, Toronto office | $10 85 | |
| | | $10 85 |

THOS. MAGLADERY, ENGLEHART, ONT.

| | | |
|---|---|---|
| 62517—Twine | $0 85 | |
| | | $0 85 |

JOHN MELHUS, KENABEEK P.O., ONT.

| | | |
|---|---|---|
| 62669—Ties | $42 15 | |
| | | $42 15 |

MOUNCE CARTAGE & STORAGE, TORONTO, ONT.

| | | |
|---|---|---|
| 62711—Cartage | $26 00 | |
| | | $26 00 |

MINERAL RANGE RAILROAD, MARQUETTE, MICH.

| | | |
|---|---|---|
| 62955—Ticket balance | $0 84 | |
| | | $0 84 |

DR. H. H. MOORE, TIMMINS ONT.

| | | |
|---|---|---|
| 63670—Service rendered C. Celestine | $22 41 | |
| | | $22 41 |

MISS M. MOLYNEAUX, STENOGRAPHER, COBALT, ONT.

| | | |
|---|---|---|
| 62410—Services rendered | $46 13 | |
| | | $46 13 |

METHODIST CHURCH, IROQUOIS FALLS, ONT.

| | | |
|---|---|---|
| 62412—Donation towards church and parsonage | $50 00 | |
| | | $50 00 |

HUGH C. MACLEAN, TORONTO, ONT.

| | | |
|---|---|---|
| 62720—Advertising "Contract Record" | $6 70 | |
| 63296—Subscription to "Canada Lumbermen" | 4 00 | |
| | | $10 70 |

C. C. MILLER, CRANE MAN, ENGLEHART, ONT.

| | | |
|---|---|---|
| 63216—Travelling expenses | $3 75 | |
| | | $3 75 |

MILTON PRESSED BRICK CO., LIMITED, MILTON, ONT.

| | | |
|---|---|---|
| 63290—Buff pressed brick | $167 04 | |
| | | $167 04 |

MONTPELIER & WELLS RIVER RAILROAD, BOSTON, MASS.

| | | |
|---|---|---|
| 63624—Car repairs | $0 93 | |
| | | $0 93 |

H. H. MCGEE, TRAVELLING AUDITOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56453—Travelling expenses | $35 30 | |
| 56711— " " | 25 50 | |
| 57559— " " | 63 15 | |
| 58101— " " | 9 10 | |
| 57732— " " | 34 25 | |
| 58746— " " | 108 30 | |
| 59953— " " | 19 25 | |
| 60192— " " | 38 05 | |
| 61067— " " | 27 45 | |
| 61254— " " | 35 90 | |
| 62237— " " | 50 90 | |
| | | $447 15 |

MACDONELL & O'BRIEN, MONTREAL, QUE.

| | | |
|---|---|---|
| 56575—Claim No. 9533, overcharge in weight on machinery | $13 24 | |
| | | $13 24 |

MacDonald & Company, Cobalt, Ont.

| | | |
|---|---|---|
| 56659—Claim No. 10149, eggs broken in transit | $2 80 | |
| | | $2 80 |

W. J. McDougall, Cane, Ont.

| | | |
|---|---|---|
| 56737—Donation account heifer alleged killed | $25 00 | |
| 60064—Ties | 54 36 | |
| | | $79 36 |

J. A. McFarlane, Englehart, Ont.

| | | |
|---|---|---|
| 56739—Cartage | $5 35 | |
| | | $5 35 |

J. McLellan, Lineman, Cochrane, Ont.

| | | |
|---|---|---|
| 57073—Travelling expenses | $3 00 | |
| 56970— " " | 6 05 | |
| 57733— " " | 14 35 | |
| 60276— " " | 3 55 | |
| 61535— " " | 17 65 | |
| 61402— " " | 11 65 | |
| 61404— " " | 8 05 | |
| 62627— " " | 16 40 | |
| 62780— " " | 18 20 | |
| | | $98 90 |

J. D. MacAlpine, Collinwood, Ohio.

| | | |
|---|---|---|
| 57271—Manuals, guides and reference tables | $3 90 | |
| | | $3 90 |

McCord & Company, Incorporated, Chicago, Ill.

| | | |
|---|---|---|
| 57273—Journal boxes | $32 10 | |
| 58402— " " | 122 40 | |
| 59126— " " | 186 00 | |
| 60589— " " | 79 80 | |
| 60768— " " | 155 40 | |
| | | $575 70 |

McLaren & Dallas, Toronto, Ont.

| | | |
|---|---|---|
| 57371—Claim No. 10508, loss account damage to trunk | $3 60 | |
| | | $3 60 |

J. A. McDonald, K.C., Toronto, Ont.

| | | |
|---|---|---|
| 56682—Services rendered | $150 00 | |
| 59862—Services rendered | 247 50 | |
| | | $397 50 |

J. M. McNamara, K.C., North Bay, Ont.

| | | |
|---|---|---|
| 56790—Legal services | $35 90 | |
| 59583— " " | 10 68 | |
| 60376— " " | 14 30 | |
| | | $60 88 |

McIntyre Porcupine Mines, Limited, Schumacher, Ont.

| | | |
|---|---|---|
| 57090—Claim No. 10538, shortage one dead plate | $8 00 | |
| 59898— " No. 10771, damage to mining machinery | 44 41 | |
| 61169— " No. 12047, 10306, loss gold ore | 154 35 | |
| | | $206 76 |

McColl Brothers & Co., Toronto, Ont.

| | | |
|---|---|---|
| 57482—Varnish, soap | $34 65 | |
| 60780—Soap | 47 90 | |
| 61744—Soap | 95 40 | |
| | | $177 95 |

J. J. McNeil, Latchford, Ont.

| | | |
|---|---|---|
| 57484—Slabs | 22 13 | |
| 61500—Ties | 146 07 | |
| 59783—Slabs | 133 50 | |
| | | $301 70 |

McAuslan & Anderson, North Bay, Ont.

| | | |
|---|---|---|
| 57715—Plans and descriptions | $10 00 | |
| 59480—Services and expenses | 36 00 | |
| 60016— " rendered | 30 00 | |
| 62021— " " | 34 20 | |
| 61124— " " | 5 00 | |
| 62481—Plans and descriptions, Latchford | 5 00 | |
| | | $120 20 |

Geo. W. McDonald, North Bay, Ont.

| | | |
|---|---|---|
| 57929—Dunnage bag | $1 50 | |
| | | $1 50 |

J. R. McCrea, New Liskeard, Ont.

| | | |
|---|---|---|
| 58053—Claim No. 10648, damage to box ink | $0 68 | |
| | | $0 68 |

Jas. McManus, Road Department, North Bay, Ont.

| | | |
|---|---|---|
| 57972—Expenses, travelling | $3 30 | |
| | | $3 30 |

McKinley-Darragh-Savage Mines, Cobalt, Ont.

| | | |
|---|---|---|
| 58022—Claim No. 10723, overcharge in weight steel | $2 34 | |
| | | $2 34 |

J. J. McBurney, North Bay, Ont.

| | | |
|---|---|---|
| 58404—Birch | $373 79 | |
| 58863—Lumber | 109 90 | |
| | | $483 69 |

S. McIvor, M. P. Department, North Bay, Ont.

| | | |
|---|---|---|
| 58599—Travelling expenses | $7 05 | |
| | | $7 05 |

The R. McDougall Co., Limited, Galt, Ont.

| | | |
|---|---|---|
| 58857—Pump valves | $9 00 | |
| 60912—Casting | 54 40 | |
| 61933—Pump | 54 40 | |
| 61746—Valves, hose, cylinders | 79 51 | |
| | | $197 31 |

McCord Manufacturing Company, Detroit, Mich.

| | | |
|---|---|---|
| 58859—Gaskets | $21 96 | |
| 59138— " | 9 48 | |
| 60585— " | 1 75 | |
| 60770— " | 7 90 | |
| | | $41 09 |

THE McCONWAY & TORLEY CO., PITTSBURG, PA.

| | | |
|---|---|---|
| 58861—Locking pins | $5 10 | |
| | | $5 10 |

GEO. A. McKAY, TORONTO, ONT.

| | | |
|---|---|---|
| 58897—Claim No. 10773—Overcharge rate, planing machinery .. | $12 00 | |
| | | $12 00 |

W. McCHRISTIE, MATHESON, ONT.

| | | |
|---|---|---|
| 59181—Services rendered | $5 25 | |
| | | $5 25 |

McWILLIAM & EVERIST, LIMITED, TORONTO.

| | | |
|---|---|---|
| 59131—Claim No. 11011—Damage to fruit | $1,080 43 | |
| | | $1,080 43 |

McGREGOR, BANWELL FENCE CO., LIMITED, WALKERVILLE, ONT.

| | | |
|---|---|---|
| 58878—Railway gates | $29 11 | |
| | | $29 11 |

N. J. McCUBBIN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 59140—Uniforms | $581 00 | |
| 60374— " | 115 00 | |
| 61235— " | 44 50 | |
| | | $740 50 |

A. McLAUGHLIN (M.P. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 59336—Expenses—Travelling | $7 35 | |
| 59705— " | 9 80 | |
| 62316— " | 10 85 | |
| 62567— " | 16 80 | |
| | | $44 80 |

RODGER McINTOSH, SEMANS, SASK.

| | | |
|---|---|---|
| 59404—Claim No. 11259—Loss account, baggage destroyed by fire | $100 00 | |
| | | $100 00 |

WESLEY McKNIGHT, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 59805—Claim No. 11025—Loss account, shortage, 2 pair shoes.... | $3 20 | |
| 62562—Claim No. 12658—Loss, pair shoes | 5 00 | |
| | | $8 20 |

PATRICK McCOOL, NORTH BAY, ONT.

| | | |
|---|---|---|
| 60587—Piles | $837 20 | |
| 61467— " | 300 00 | |
| 61469— " | 700 00 | |
| 61471— " | 156 80 | |
| 62692—Clearance dues deducted | 187 20 | |
| | | $2,181 20 |

HARRY McKNIGHT, TORONTO, ONT.

| | | |
|---|---|---|
| 59794—Services rendered as mail messenger | $10 00 | |
| 60811— " " " | 10 00 | |
| 61032— " " " | 10 00 | |
| 62123— " " " | 10 00 | |
| 62332— " " " | 10 00 | |
| | | $50 00 |

ARCHIBALD MCGILLIS, NORTH BAY, ONT.

| | | |
|---|---|---|
| 59844—Award W. C. B., final payment *re* alleged injuries ..... | $4 71 | $4 71 |

MCCLARY MANUFACTURING COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 60774—Box stoves ..... | $26 82 | |
| 63135—Soot boxes ..... | 2 24 | |
| 62950—Stoves ..... | 42 50 | |
| | | $71 56 |

JAMES MCBRIDE, BRENTWOOD, ONT.

| | | |
|---|---|---|
| 60793—Unclaimed wages ..... | $25 75 | $25 75 |

LIEUT. H. A. MCDOUGALD, CAMP BORDEN, ONT.

| | | |
|---|---|---|
| 60999—Claim No. 11896—Loss account, baggage destroyed by fire | $100 00 | $100 00 |

W. J. MCGRATHERS, WIDDIFIELD, ONT.

| | | |
|---|---|---|
| 61419—Clearing station grounds, Widdifield ..... | $209 00 | |
| 62565— " " " ..... | 146 30 | |
| 62678— " " " ..... | 207 20 | |
| | | $562 50 |

WM. MCCRACKEN, TIMMINS, ONT.

| | | |
|---|---|---|
| 61489—Claim No. 11263—Account, damage to table ..... | $5 00 | $5 00 |

WM. MCMILLAN, (M.M. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 61533—Expenses—Travelling ..... | $16 10 | |
| 62483— " ..... | 7 00 | |
| 62676— " ..... | 17 30 | |
| | | $40 40 |

J. P. MCLAUGHLIN, TIMMINS, ONT.

| | | |
|---|---|---|
| 61629—Claim No. 11570—Loss, syrup ..... | $0 48 | $0 48 |

MRS. LAURA MCKEE, ELK LAKE, ONT.

| | | |
|---|---|---|
| 61284—Rental, telephone lines ..... | $5 00 | |
| 61286—Rental, telephone lines ..... | 45 00 | |
| | | $50 00 |

J. A. MCANDREW, TORONTO, ONT.

| | | |
|---|---|---|
| 62052—Claim No. 12200—Damage to boat ..... | $10 00 | $10 00 |

GEO. MCLOGAN FURNITURE COMPANY, LIMITED, STRATFORD, ONT.

| | | |
|---|---|---|
| 62317—Claim No. 12399—Alleged loss, furniture ..... | $1,591 66 | $1,591 66 |

P. MCDONELL (M.M. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 62339—Travelling expenses ..... | $9 75 | $9 75 |

MCPHERSON, GLASSCO & COMPANY, HAMILTON, ONT.

| | | |
|---|---|---|
| 62653—Claim No. 12643—Alleged loss soap ..... | $48 85 | $48 85 |

McGRAW-HILL BOOK COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 62648—Car Builders' Directory | $6 00 | |
| | | $6 00 |

D. McLELLAN, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 62650—Lumber | $312 01 | |
| | | $312 01 |

McCORMICK MFG. COMPANY, LIMITED, LONDON, ONT.

| | | |
|---|---|---|
| 63248—Claim No. 12769—Confectionery alleged destroyed | $34 08 | |
| | | $34 08 |

NATIONAL LIFE ASSURANCE CO. OF CANADA, TORONTO, ONT.

| | | |
|---|---|---|
| 56477—Rent of offices, November, 1915 | $293 75 | |
| 56512— " " December, 1915 | 293 75 | |
| 57461— " " January, 1916 | 293 75 | |
| 57590— " " February, 1916 | 293 75 | |
| 58481— " " March, 1916 | 293 75 | |
| 58638— " " April, 1916 | 293 75 | |
| 59625— " " May, 1916 | 293 75 | |
| 59796— " " June, 1916 | 293 75 | |
| 60813— " " July, 1916 | 293 75 | |
| 61034— " " August, 1916 | 293 75 | |
| 62125— " " September, 1916 | 293 75 | |
| 62336— " " October, 1916 | 293 75 | |
| | | $3,525 00 |

NORFOLK & WESTERN RAILWAY COMPANY, ROANOKE, VA.

| | | |
|---|---|---|
| 56529—Car repairs | $5 26 | |
| 56977— " | 17 40 | |
| 57119— " | 6 22 | |
| 58241—Car service balance | 40 05 | |
| 58186— " " | 31 05 | |
| 59331— " " | 14 40 | |
| 59292— " repairs | 7 06 | |
| 59654— " service balance | 37 80 | |
| 60287— " " | 27 00 | |
| 60102— " repairs | 4 52 | |
| 60546— " service balance | 16 20 | |
| 61106— " repairs | 1 51 | |
| 62002— " " | 4 83 | |
| 62180— " service balance | 36 00 | |
| | | $249 30 |

NEW YORK, CHICAGO & ST. LOUIS RAILROAD COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 56531—Car repairs | $11 60 | |
| 56975— " " | 11 64 | |
| 57123— " " | 84 | |
| 56900— " service balance | 9 75 | |
| 56950—Ticket balance | 3 70 | |
| 58237—Car service balance | 17 10 | |
| 58183— " " | 23 40 | |
| 59529— " repairs | 20 64 | |
| 59286— " " | 2 18 | |
| 60067— " " | 16 03 | |
| 60283— " service balance | 49 70 | |
| 60098— " repairs | 13 38 | |
| 60542— " service balance | 3 15 | |
| 61779— " " | 1 80 | |
| 61104— " repairs | 3 49 | |
| 61866— " " | 5 02 | |
| 62885— " service balance | 27 00 | |
| 63628— " repairs | 8 15 | |
| | | $228 57 |

NORTHERN PACIFIC RAILWAY COMPANY, ST. PAUL, MINN.

| | | |
|---|---|---|
| 56533—Car repairs | $1 78 | |
| 56805— " " | 35 | |
| 57115— " " | 1 58 | |
| 57248— " " | 1 05 | |
| 58239— " service balance | 14 85 | |
| 58327—Ticket balance | 6 25 | |
| 58399—Car repairs | 5 50 | |
| 58184— " service balance | 28 80 | |
| 59327— " " | 30 15 | |
| 59288— " repairs | 1 91 | |
| 59650— " service balance | 48 70 | |
| 60043— " repairs | 73 | |
| 60285— " service balance | 15 30 | |
| 60104— " repairs | 1 84 | |
| 61309— " " | 79 | |
| 61920— " " | 15 75 | |
| 62485— " " | 1 28 | |
| 62957—Ticket balance | 39 | |
| 62566—Claim No. 10315—Overcharge rate, pipe material | 133 50 | |
| | | $310 50 |

NORFOLK SOUTHERN RAILROAD COMPANY, NORFOLK, VA.

| | | |
|---|---|---|
| 56627—Car repairs | $0 42 | |
| 56906— " service balance | 15 30 | |
| 58249— " " | 2 70 | |
| 58192— " " | 12 60 | |
| 59337— " " | 7 55 | |
| 59658— " " | 4 05 | |
| 60291— " " | 31 05 | |
| 60552— " " | 18 00 | |
| 62182— " " | 8 10 | |
| 62893— " " | 12 15 | |
| 63780— " repairs | 98 | |
| | | $112 90 |

NIPISSING MINING COMPANY, LIMITED, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56661—Claim No. 8414—Overcharge in rate on silver ore | $78 09 | |
| 57751— " 10395—Loss, acid | 18 79 | |
| 62054— " 12042—Damage to crucible | 44 60 | |
| 62902— " 12252—Overcharge rate, caustic soda | 43 66 | |
| | | $185 14 |

NORTHERN ONTARIO LIGHT & POWER COMPANY, LTD.

| | |
|---|---|
| 56663—Claim No. 10161—Siding rebate | $13 00 |
| 56741—Current supplied, Timmins | 19 30 |
| 57029— " " Haileybury | 5 23 |
| 57031— " " New Liskeard | 10 66 |
| 57033— " " Porcupine | 4 81 |
| 57035— " " South Porcupine | 6 50 |
| 57037— " " Schumacher | 6 98 |
| 57039— " " Timmins | 12 18 |
| 56688— " " Cochrane | 4 73 |
| 56690— " " Timmins | 17 94 |
| 56794— " " Cobalt | 49 79 |
| 56796— " " New Liskeard | 12 90 |
| 56798— " " Porcupine | 5 77 |
| 56800— " " South Porcupine | 8 90 |
| 56802— " " Timmins | 30 74 |
| 57192— " " Cobalt | 56 99 |
| 57194— " " Cochrane | 6 65 |
| 57196— " " Haileybury | 9 23 |
| 57198— " " New Liskeard | 16 90 |
| 57200— " " South Porcupine | 9 62 |
| 57202— " " Porcupine | 6 41 |

NORTHERN ONTARIO LIGHT & POWER COMPANY, LIMITED.—*Continued.*

| | | | | |
|---|---|---|---|---|
| 57204— | Current supplied, | | Schumacher | $17 96 |
| 57206— | " | " | Timmins | 13 46 |
| 57721— | " | " | Timmins | 28 42 |
| 57754— | " | " | Haileybury | 8 24 |
| 57756— | " | " | New Liskeard | 14 82 |
| 57758— | " | " | South Porcupine | 9 14 |
| 57760— | " | " | Porcupine | 5 77 |
| 57762— | " | " | Schumacher | 9 14 |
| 57764— | " | " | Timmins | 16 34 |
| 57916— | " | " | Timmins | 35 38 |
| 58560— | " | " | Cochrane | 8 32 |
| 58562— | " | " | Haileybury | 7 79 |
| 58564— | " | " | New Liskeard | 12 96 |
| 58566— | " | " | South Porcupine | 8 18 |
| 58568— | " | " | Porcupine | 6 01 |
| 58604— | " | " | Timmins | 41 40 |
| 59187— | " | " | Haileybury | 5 12 |
| 59455— | " | " | Timmins | 22 26 |
| 59585— | " | " | Cochrane | 13 45 |
| 59587— | " | " | Porcupine | 5 05 |
| 59589— | " | " | New Liskeard | 10 54 |
| 59591— | " | " | South Porcupine | 5 85 |
| 59593— | " | " | Haileybury | 4 88 |
| 59595— | " | " | Schumacher | 19 56 |
| 59597— | " | " | Cobalt | 64 16 |
| 59599— | " | " | Timmins | 10 66 |
| 59770— | " | " | South Porcupine | 4 90 |
| 59772— | " | " | Timmins | 8 42 |
| 59774— | " | " | Haileybury | 4 24 |
| 59776— | " | " | Porcupine | 3 37 |
| 59753— | " | " | Cobalt | 56 48 |
| 59775— | " | " | Timmins | 17 14 |
| 60429— | " | " | New Liskeard | 8 96 |
| 60431— | " | " | Haileybury | 3 20 |
| 60775— | " | " | Cobalt | 46 32 |
| 60777— | " | " | Timmins | 7 20 |
| 60779— | " | " | Schumacher | 7 92 |
| 60781— | " | " | Cochrane | 2 24 |
| 60783— | " | " | Timmins | 15 14 |
| 60785— | " | " | New Liskeard | 8 08 |
| 60787— | " | " | South Porcupine | 4 90 |
| 60850— | " | " | Timmins | 14 90 |
| 60952— | " | " | Porcupine | 4 56 |
| 60954— | " | " | Haileybury | 3 04 |
| 60956— | " | " | Timmins | 8 24 |
| 60996— | " | " | Cochrane | 49 |
| 60998— | " | " | South Porcupine | 4 48 |
| 61000— | " | " | New Liskeard | 6 08 |
| 61002— | " | " | Porcupine | 3 69 |
| 61004— | " | " | Schumacher | 5 84 |
| 62041— | " | " | Timmins | 17 14 |
| 62093— | " | " | Schumacher | 4 88 |
| 62095— | " | " | Timmins | 9 84 |
| 62097— | " | " | Porcupine | 1 36 |
| 62099— | " | " | New Liskeard | 4 56 |
| 62101— | " | " | South Porcupine | 3 68 |
| 62103— | " | " | Haileybury | 9 03 |
| 62105— | " | " | Cobalt | 28 64 |
| 61354— | " | " | North Cobalt | 75 48 |
| 61468— | " | " | Cobalt | 15 04 |
| 62284— | " | " | Timmins | 8 40 |
| 62286— | " | " | New Liskeard | 10 56 |
| 62288— | " | " | Timmins | 5 60 |
| 62290— | " | " | Haileybury | 4 00 |
| 62289— | " | " | Porcupine | 1 92 |
| 62291— | " | " | South Porcupine | 3 28 |
| 63173— | " | " | Timmins | 20 56 |

NORTHERN ONTARIO LIGHT & POWER COMPANY, LIMITED.—*Continued.*

| | | | |
|---|---|---|---|
| 62522—Current supplied, | North Cobalt | $6 64 | |
| 62524— " " | Haileybury | 4 96 | |
| 62526— " " | Timmins | 16 24 | |
| 62528— " " | Porcupine and South Porcupine | 6 16 | |
| 62986— " " | Cochrane | 1 28 | |
| 62988— " " | Haileybury | 6 32 | |
| 62990— " " | Cobalt | 27 12 | |
| 63082— " " | New Liskeard | 15 68 | |
| 63084— " " | Cobalt | 25 20 | |
| 63086— " " | South Porcupine | 4 72 | |
| 63164— " " | New Liskeard | 11 04 | |
| 63166— " " | Cobalt | 4 72 | |
| 63380— " " | Porcupine | 2 48 | |
| 63820— " " | Cochrane | 2 49 | |
| | | | $1,328 94 |

THE NORTH BAY PROVISION CO., NORTH BAY, ONT.

| | | | |
|---|---|---|---|
| 56743—Supplies for private car | | $7 61 | |
| 56686— " " " " | | 30 97 | |
| 58414— " " " " | | 128 12 | |
| 63162— " " " " | | 16 04 | |
| | | | $182 74 |

NIAGARA FRONTIER SUMMER RATE COMMITTEE, MONTREAL, QUE.

| | | | |
|---|---|---|---|
| 56745—Proportion expenses | | $21 75 | |
| | | | $21 75 |

NEW ORLEANS, MOBILE & CHICAGO RAILROAD CO., MOBILE, ALA.

| | | | |
|---|---|---|---|
| 56807—Car repairs | | $11 17 | |
| 57121— " repairs | | 12 30 | |
| 58255— " service balance | | 4 95 | |
| 59664— " " " | | 12 15 | |
| 60297— " " " | | 6 75 | |
| 59972— " repairs | | 1 10 | |
| 60558— " service balance | | 2 25 | |
| 61791— " " " | | 3 60 | |
| 62188— " " " | | 1 80 | |
| | | | $56 07 |

NORTH BAY LIGHT, HEAT & POWER CO., LTD., NORTH BAY, ONT.

| | | | |
|---|---|---|---|
| 56849—Current supplied | | $0 50 | |
| 56724— " " | | 50 | |
| 57208— " " | | 50 | |
| 57933—Lamps " | | 9 17 | |
| 58572—Current " | | 50 | |
| 58948— " " | | 50 | |
| 60065— " " | | 50 | |
| 60074— " " | | 50 | |
| 60960— " " | | 50 | |
| 60829—Bolts | | 96 | |
| 61959—Current supplied | | 50 | |
| | | | $14 63 |

NICHOLSON FILE COMPANY PORT HOPE, ONT.

| | | | |
|---|---|---|---|
| 56901—Files | | $25 02 | |
| 56990— " | | 58 05 | |
| 57802— " | | 47 01 | |
| 58941—Discount deducted in error | | 96 | |
| 59152—Files | | 37 82 | |
| 60641— " | | 75 31 | |
| 61239— " | | 89 94 | |
| 63027— " | | 15 88 | |
| 63300— " | | 39 39 | |
| | | | $389 38 |

NEW ORLEANS & NORTHEASTERN R. R. CO., NEW ORLEANS, LA.

| | | |
|---|---|---|
| 57117—Car repairs | $0 19 | |
| 56908— " service balance | 45 | |
| 57246— " repairs | 52 | |
| 58251— " service balance | 13 50 | |
| 58401— " repairs | 1 22 | |
| 58194— " service balance | 29 25 | |
| 59339— " service balance | 4 50 | |
| 59300— " repairs | 1 25 | |
| 59660— " service balance | 13 05 | |
| 60293— " service balance | 7 65 | |
| 59970— " repairs | 09 | |
| 60554— " service balance | 90 | |
| 61787— " service balance | 1 80 | |
| 61998— " repairs | 3 11 | |
| 62184— " service balance | 11 25 | |
| 62895— " service balance | 1 35 | |
| | | $90 08 |

NATIONAL DRUG & CHEMICAL CO. OF CANADA, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57275—Chamois, sponges, chemicals, etc. | $60 40 | |
| 57486—Chamois, sal soda | 6 36 | |
| 57961—First aid supplies and chemicals, etc. | 69 25 | |
| 58406—Ammon fort, petrolatum, chamois | 8 50 | |
| 58939—Sponges, cabinet | 28 75 | |
| 59162—Chemicals, chamois | 107 28 | |
| 60597—Borax, potash, lime, etc. | 69 50 | |
| 60798—Chamois, sal soda | 10 48 | |
| 61598—Castor oil | 9 68 | |
| 61750—Aid cabinet, chamois, etc. | 25 46 | |
| 63141—Sal soda, ammonia, etc. | 28 31 | |
| 62956—First aid material, etc. | 9 38 | |
| 63298—Sal soda | 2 81 | |
| | | $436 16 |

THE NIPISSING CENTRAL RAILWAY COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 57277—Track spikes, lumber, etc. | $256 87 | |
| 59457—Transportation | 5 60 | |
| 59655—Advance to cover capital account | 12,420 47 | |
| 63458—Advance to cover capital account | 6,024 87 | |
| | | $18,707 81 |

NORTHERN ELECTRIC COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57279—Electrical material | $244 87 | |
| 57494—Telephone material, gaskets | 46 98 | |
| 57963—Electrical material | 922 78 | |
| 58410—Telephone material and wire | 3,119 43 | |
| 59001—Telephone supplies, etc. | 307 30 | |
| 59154—Receptacles | 2 16 | |
| 60591—Staples, wire, cords, etc. | 904 81 | |
| 59842—Travelling expenses, Spryer | 12 50 | |
| 60772—Carbon blocks, coils | 13 70 | |
| 60914—Selectors, wire, etc. | 258 47 | |
| 61243—Telephone material | 41 21 | |
| 61593—Panel boards, etc. | 79 12 | |
| 61937—Clamp, switches, etc. | 152 04 | |
| 61646—Copper wire, gloves, etc. | 50 09 | |
| 61748—Receivers, batteries, etc. | 418 53 | |
| 63137—Wire, lamp, cord, tape, etc. | 127 31 | |
| 62652—Telephone material | 57 94 | |
| 62724—Carbon brushes | 1 80 | |
| 62952—Telephones, batteries, etc. | 250 10 | |
| 63302—Receptacles, etc. | 175 54 | |
| | | $7,186 68 |

NORTHERN CANADA SUPPLY CO., LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 57373—Claim No. 10469—Siding rebate | $44 93 | |
| 57098— " No. 10340—Loss account damage to bbl. turpentine | 2 70 | |
| 58055— " No. 10569—Loss account shortage to bbl. turpentine | 7 90 | |
| 60893—Couplings, etc. | 1 58 | |
| 60939—Claim No. 11572—Damage to pump handle | 77 | |
| 61633— " No. 12125—Damage to hoes | 65 | |
| 62753— " No. 11784—Loss metallic lath | 7 26 | |
| | | $65 79 |

NEW ORLEANS COLONIZATION CO., LIMITED, BUFFALO, N.Y.

| | | |
|---|---|---|
| 57375—Claims No. 10295, 10317—Overcharge rate and weight | $92 62 | |
| 63252—Claim No. 10632—Overcharge rate | 14 57 | |
| | | $107 19 |

NIPISSING POWER CO., LIMITED, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57433—Current supplied | $130 52 | |
| 57576— " " | 169 14 | |
| 58447— " " | 150 82 | |
| 58606— " " | 163 57 | |
| 59185— " " | 118 57 | |
| 59482— " " | 106 88 | |
| 60789— " " | 95 99 | |
| 60726— " " | 107 48 | |
| 62039— " " | 110 96 | |
| 62282— " " | 104 55 | |
| 63171— " " | 128 13 | |
| | | $1,386 61 |

NATIONAL COUNCIL YOUNG MEN'S CHRISTIAN ASSOCIATION OF CANADA, TORONTO, ONT.

| | | |
|---|---|---|
| 56634—Donation | $25 00 | |
| | | $25 00 |

NIPISSING LAUNDRY CO., LIMITED, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56684—Laundry | $3 21 | |
| 57138— " | 6 42 | |
| 57766— " | 5 44 | |
| 58570— " | 7 90 | |
| 58943— " | 20 40 | |
| 59751— " | 2 07 | |
| 60771— " | 8 49 | |
| 60773— " | 1 44 | |
| 60018— " | 6 27 | |
| 60250— " | 6 48 | |
| 61006— " | 2 49 | |
| 61421— " | 5 59 | |
| 61290— " | 2 37 | |
| 61292— " | 4 35 | |
| 61644— " | 2 76 | |
| 62292— " | 1 89 | |
| 62530— " | 1 11 | |
| 62992— " | 4 73 | |
| 63088— " | 3 60 | |
| 63816— " | 1 23 | |
| 63818— " | 1 98 | |
| | | $100 22 |

NEW YORK CENTRAL RAILROAD CO., NEW YORK, N.Y.

| | |
|---|---|
| 56896—Car service balance | $65 85 |
| 56948—Ticket balance | 99 70 |
| 57094—Claim No. 9794—Overcharge on iron conveyors and fixtures | 29 70 |
| 57244—Car repairs | 99 92 |

NEW YORK CENTRAL RAILROAD COMPANY, ETC.—*Continued.*

| | | |
|---|---|---|
| 58247—Car service balance | 120 90 | |
| 58325—Ticket balance | 59 78 | |
| 58395—Car repairs | 57 17 | |
| 58178— " service balance | 188 74 | |
| 58260— " " " | 24 86 | |
| 59323— " " " | 302 40 | |
| 59415— " " " | 8 18 | |
| 59525— " repairs | 55 93 | |
| 59296— " " | 54 84 | |
| 59298— " " | 3 70 | |
| 59646— " service balance | 561 75 | |
| 60041— " repairs | 39 56 | |
| 60279— " service balance | 551 95 | |
| 60427— " repairs | 82 05 | |
| 61175—Claim No. 10728—Overcharge weight pulpwood | 1 62 | |
| 61311—Car repairs | 58 80 | |
| 61777— " service balance | 299 20 | |
| 61868— " repairs | 42 42 | |
| 61996— " repairs | 63 29 | |
| 62755—Claim No. 11002—Overcharge rate pulpwood | 3 07 | |
| 62564—Claim No. 12026—Damage paper | 18 33 | |
| 62984—Car repairs | 118 89 | |
| 63626— " " | 40 56 | |
| 63774— " " | 2 06 | |
| 62075—Claim No. 12317—Overcharge rate pulpwood | 2 94 | |
| | | $3,058 16 |

NEW YORK, SUSQUEHANNA & WESTERN RAILROAD COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56898—Car service balance | $2 25 | |
| 59329— " " | 10 35 | |
| 59652— " " | 1 80 | |
| 59968— " repairs | 42 | |
| 61781— " service balance | 6 75 | |
| 62178— " " | 18 45 | |
| 62887— " " | 7 20 | |
| 63510— " " | 2 25 | |
| | | $49 47 |

NEW YORK, NEW HAVEN & HARTFORD R.R. COMPANY, NEW HAVEN, CONN.

| | | |
|---|---|---|
| 56902—Car service balance | $23 40 | |
| 57250— " repairs | 31 | |
| 58243— " service balance | 68 40 | |
| 58397— " repairs | 83 | |
| 58188— " service balance | 64 35 | |
| 59333— " " | 28 80 | |
| 59527— " repairs | 65 | |
| 59302— " " | 1 03 | |
| 59656— " service balance | 54 90 | |
| 60289— " " | 77 85 | |
| 60548— " " | 79 20 | |
| 62000— " repairs | 97 | |
| 62293— " service balance | 107 55 | |
| 62889— " " | 50 85 | |
| 63195—Claim No. 12543—Overcharge rate | 9 25 | |
| 63512—Car service balance | 13 95 | |
| | | $582 29 |

NEW YORK, ONTARIO & WESTERN RAILWAY COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56904—Car service balance | $1 80 | |
| 58245— " " | 28 35 | |
| 58190— " " | 45 | |
| 59335— " " | 13 50 | |

NEW YORK, ONTARIO & WESTERN RAILWAY COMPANY, ETC.—*Continued.*

| | | |
|---|---|---|
| 60550—Car service balance | $9 45 | |
| 61785— " " | 11 70 | |
| 62891— " " | 10 80 | |
| 63514— " " | 3 15 | |
| 63630—Value body car and air-brake equipment destroyed | 300 15 | |
| | | $379 35 |

NASHVILLE, CHATTANOOGA & ST. LOUIS RAILWAY, NASHVILLE, TENN.

| | | |
|---|---|---|
| 56910—Car service balance | $11 25 | |
| 58253— " " | 1 80 | |
| 59341— " " | 18 45 | |
| 59662— " " | 31 50 | |
| 59915— " repairs | 16 | |
| 60295— " service balance | 34 20 | |
| 60556— " " | 15 30 | |
| 61789— " " | 12 15 | |
| 62186— " " | 22 50 | |
| 62897— " " | 14 85 | |
| 63516— " " | 4 50 | |
| | | $166 66 |

NEW ORLEANS GREAT NORTHERN RAILROAD COMPANY, BOGALUSA, LA.

| | | |
|---|---|---|
| 57032a—Car repairs | $0 12 | |
| 58180— " service balance | 2 25 | |
| 59325— " " | 3 15 | |
| 59010— " repairs | 5 02 | |
| 59648— " service balance | 1 35 | |
| 60045— " repairs | 2 30 | |
| 60281— " service balance | 90 | |
| 60540— " " | 3 15 | |
| 61775— " " | 4 05 | |
| 62883— " " | 3 15 | |
| 63508— " " | 3 60 | |
| 63778— " repairs | 10 | |
| | | $29 14 |

NORTHERN LUMBER MILLS, LIMITED, NORTH COBALT, ONT.

| | | |
|---|---|---|
| 57068—Claim No. 10192—Siding rebate | $132 00 | |
| | | $132 00 |

NIAGARA, ST. CATHARINES & TORONTO RAILWAY COMPANY, ST. CATHARINES, ONT.

| | | |
|---|---|---|
| 57096—Claims Nos. 9477 and 9868—Overcharge silver ore | $4 10 | |
| 59085— " Nos. 9956 and 9915— " " | 4 43 | |
| 62751—Claim No. 10486— " " | 5 32 | |
| | | $13 85 |

NORTH AMERICAN BENT CHAIR COMPANY, LIMITED, OWEN SOUND, ONT.

| | | |
|---|---|---|
| 57488—Chairs | $8 40 | |
| 58412— " | 14 00 | |
| 58996— " | 8 40 | |
| 60595— " | 16 80 | |
| 63029— " | 16 80 | |
| | | $64 40 |

THE NICHOLS CHEMICAL COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 57490—Sulphuric acid | $21 78 | |
| 60643—Acid, carboys | 54 72 | |
| | | $76 50 |

THE NEW YORK TIMES, NEW YORK, N.Y.

| | | |
|---|---|---|
| 57492—Copies of *New York Times* | $0 60 | |
| | | $0 60 |

NORFOLK & CHESAPEAKE COAL COMPANY, DETROIT, MICH.

| | | |
|---|---|---|
| 57719—Coal | $52 13 | |
| 58703— " | 10 42 | |
| 59142— " | 129 20 | |
| 60715— " | 35 10 | |
| 60852— " | 61 76 | |
| | | $288 61 |

A. O. NORTON, LIMITED, COATICOOK, QUE.

| | | |
|---|---|---|
| 57931—Repair parts for jacks | $90 40 | |
| 58408— " " | 201 90 | |
| 61935— " " | 3 00 | |
| | | $295 30 |

NIAGARA FALLS PICKLES, LIMITED, NIAGARA FALLS, ONT.

| | | |
|---|---|---|
| 58057—Claim No. 10067—Loss pickles | $16 23 | |
| | | $16 23 |

NEW ORLEANS, TEXAS & MEXICO R.R., NEW ORLEANS, LA.

| | | |
|---|---|---|
| 58411—Car repairs | $1 31 | |
| 59294— " " | 42 | |
| 59666— " service balance | 3 60 | |
| 60301— " " | 1 80 | |
| 60562— " " | 3 60 | |
| 62487— " repairs | 8 67 | |
| 63776— " " | 1 92 | |
| | | $21 32 |

NEWS PUBLISHING COMPANY, OF TORONTO, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58455—Advertising, "Ontario Demonstration Car" | $9 00 | |
| | | $9 00 |

NATIONAL RAILWAY PUBLICATION COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 57918—Representation in "Official Guide" and subscription | $30 50 | |
| 58742—Subscription, "Official Guide" | 7 80 | |
| 60831—Subscription, "Official Guide" | 7 80 | |
| 61288—Representation, "Official Guide" | 30 00 | |
| | | $76 10 |

NATIONAL SAFETY COUNCIL, CHICAGO, ILL.

| | | |
|---|---|---|
| 58104—Membership fee | $20 00 | |
| | | $20 00 |

THE NATIONAL MALLEABLE CASTINGS COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 58416—Hasps | $1 00 | |
| 59095— " | 1 00 | |
| 63139— " | 1 50 | |
| | | $3 50 |

NIPISSING COCO-COLA BOTTLING WORKS, LIMITED, COCHRANE, ONT.

| | | |
|---|---|---|
| 58903—Claim No. 10466—Shortage, 1 case beer | $2 00 | |
| 63698— " 12471 " empties | 13 05 | |
| 63702— " 12394 " soft drinks | 63 40 | |

NIPISSING COCO-COLA BOTTLING WORKS, LIMITED, ETC.—*Continued.*

| | | |
|---|---|---|
| 63706—Claim No. 12397—Shortage, soft drinks | $12 75 | |
| 63710— " 12396 " " | 7 65 | |
| 63722— " 12398 " " | 44 20 | |
| | | $143 05 |

NORTHERN MINER PRESS, LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 59097—Subscription, *The Northern Miner* | $1 50 | |
| 62426—Advertising *re* tenders, sale of land | 25 20 | |
| | | $26 70 |

NEW YORK & CUBA MAIL STEAMSHIP CO., NEW YORK, N.Y.

| | | |
|---|---|---|
| 59417—Ticket balance | $84 00 | |
| | | $84 00 |

TOWN OF NEW LISKEARD, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 59459—Water supplied | $360 00 | |
| 59717—Annual sewer charges | 542 72 | |
| 58492—Water supplied | 270 00 | |
| | | $1,172 72 |

NEW ENGLAND PASSENGER ASSOCIATION, BOSTON, MASS.

| | | |
|---|---|---|
| 59601—Propn. cost copies New England and Eastern Summer Rate Proceedings | $10 00 | |
| | | $10 00 |

W. A. NICHOLS, MATHESON, ONT.

| | | |
|---|---|---|
| 58828—Claim No. 10394—Loss account, injuries to cow | $35 00 | |
| | | $35 00 |

G. NAISMITH (M.P. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 58854—Expenses, travelling | $5 00 | |
| 63218—Expenses, travelling | 14 00 | |
| | | $19 00 |

NOVA SCOTIA STEEL & COAL CO., LIMITED, NEW GLASGOW, N.S.

| | | |
|---|---|---|
| 59144—Steel axles | $611 80 | |
| | | $611 80 |

NORTHERN OHIO RAILWAY COMPANY, INDIANAPOLIS, IND.

| | | |
|---|---|---|
| 59290—Car repairs | $0 36 | |
| | | $0 36 |

NORTHERN CANADA POWER CO., LIMITED, TIMMINS, ONT.

| | | |
|---|---|---|
| 59406—Claim No. 10814—Loss account, disconnecting switches destroyed | $64 08 | |
| | | $64 08 |

T. H. NEAL, LEAVILLE P.O., ONT.

| | | |
|---|---|---|
| 59754—Ties | $110 85 | |
| 59754—Ties | 31 92 | |
| | | $142 77 |

NEWBURGH & SOUTH SHORE RAILWAY COMPANY, CLEVELAND, O.

| | | |
|---|---|---|
| 60299—Car service balance | $3 60 | |
| 60560—Car service balance | 3 60 | |
| | | $7 20 |

NORTHWESTERN PACIFIC RAILROAD COMPANY, SAN FRANCISCO, CAL.

| | | |
|---|---|---|
| 60383—Ticket balance | $5 53 | |
| 61843—Ticket balance | 6 47 | |
| | | $12 00 |

NATIONAL-STANDARD COMPANY, NILES, MICH.

| | | |
|---|---|---|
| 60593—Ball bearings | $4 50 | |
| 61939—Twist bits | 21 60 | |
| | | $26 10 |

NEW ORLEANS TERMINAL COMPANY, NEW ORLEANS, LA.

| | | |
|---|---|---|
| 60100—Car repairs | $0 89 | |
| | | $0 89 |

NORTHLAND STORES, LIMITED, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 61173—Claim No. 11673—Loss account, bottle vinegar broken | $0 34 | |
| 61491— " 11792 " groceries | 2 30 | |
| 61635— " 11674 " groceries | 1 00 | |
| 63690— " 11571 " meat | 1 80 | |
| 59410— " 10973 " groceries | 6 80 | |
| | | $12 24 |

ROBERT NEELY, THORNLOE P.O., ONT.

| | | |
|---|---|---|
| 61241—Wood | $5 00 | |
| | | $5 00 |

NORFOLK & ROCHESTER HARDWARE CO., LIMITED, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 62073—Claim No. 11986—Damage to lamp glasses | $0 25 | |
| 61374—Claim No. 11991 and 12180—Loss of oil, etc. | 5 00 | |
| 62519—Plyers | 6 00 | |
| | | $11 25 |

NIAGARA FRONTIER SUMMER RATE COMMITTEE, MONTREAL, QUE.

| | | |
|---|---|---|
| 61160—Propn. expenses | $24 36 | |
| | | $24 36 |

JOHN NEIL, CANE P.O., ONT.

| | | |
|---|---|---|
| 61500—Ties | $106 77 | |
| | | $106 77 |

C. L. NAMA, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 63197—Claim No. 12601—Alleged loss two pair shoes | $5 00 | |
| | | $5 00 |

NORTH BAY TIMES, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62722—Advertising *re* sale of lands | $18 00 | |
| | | $18 00 |

NORTH BAY MARBLE & GRANITE WORKS, NORTH BAY, ONT.

| | | |
|---|---|---|
| 62954—Sill course | $8 50 | |
| | | $8 50 |

NORTHERN CUSTOMS CONCENTRATORS, LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 63688—Claim No. 12535—Loss on account, shortage, case liquor | $16 00 | |
| | | $16 00 |

A. NEWELL, CONDUCTOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 63814—Donation, personal effects destroyed by fire | $30 00 | |
| | | $30 00 |

THE OLYMPIA COMPANY, LIMITED, WINNIPEG, MAN.

| | | |
|---|---|---|
| 56563—Supplies for private car | $26 26 | |
| | | $26 26 |

THE ONTARIO CATHOLIC YEAR BOOK & DIRECTORY, TORONTO.

| | | |
|---|---|---|
| 56635—Advertising | $15 00 | |
| | | $15 00 |

OFFICE SPECIALTY MFG. CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 56637—Putting on castors | $1 35 | |
| 56804—Repairing bookcase door | 1 60 | |
| 57500—Cards | 14 88 | |
| 58424—Filing cabinet and boards | 24 50 | |
| 58705—Transfer cases | 38 50 | |
| 59051—Filing cards and cabinet | 31 75 | |
| 58708—Upholstering chair | 2 00 | |
| 59158—Filing cards, cabinet | 3 63 | |
| 60599—Cards, file boards, etc. | 28 69 | |
| 61423—Transfer cases | 53 50 | |
| 61756—Cabinet | 30 00 | |
| 63304—Screw top file boards | 7 80 | |
| | | $238 20 |

O'BRIEN, MCDOUGALL & O'GORMAN, RENFREW, ONT.

| | | |
|---|---|---|
| 56665—Claim No. 9779, overcharge on weight | $50 39 | |
| 58024— " No. 5332, overcharge on rate vans | 59 28 | |
| 60867— " No. 7127, loss account shortage coal | 46 15 | |
| | | $155 82 |

OFFICIAL CLASSIFICATION COMMITTEE, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56747—Classifications | $19 25 | |
| 57140—Supplements to classification | 1 11 | |
| 57753— " " | 91 | |
| 58914— " " | 1 26 | |
| 60069—Supplement No. 8, classification No. 43 | 1 67 | |
| 61425—Supplement to off. classification | 1 67 | |
| 61144—Classifications | 1 36 | |
| 61162—Supplements to classification | 2 41 | |
| 62569—Supplements to classification | 1 95 | |
| | | $31 59 |

W. M. O'BEIRNE, STRATFORD, ONT.

| | | |
|---|---|---|
| 56749—Advertising Stratford *Beacon* | $0 60 | |
| | | $0 60 |

W. J. OLDHAM, B. & B. MASTER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56879—Travelling expenses | $12 60 | |
| 56750— " " | 5 00 | |
| 57629— " " | 17 00 | |
| 57876— " " | 14 25 | |
| 58601— " " | 17 20 | |
| 59338— " " | 14 25 | |
| 59855— " " | 10 50 | |
| 60194— " " | 23 35 | |
| 61541— " " | 12 00 | |
| 61256— " " | 17 85 | |
| 62267— " " | 13 95 | |
| 62818— " " | 11 50 | |
| | | $169 45 |

ONTARIO REFORMATORY INDUSTRIES, GUELPH, ONT.

| | | |
|---|---|---|
| 57281—Brooms | $45 00 | |
| 57496— " | 42 50 | |
| 57935— " | 27 00 | |
| 58422— " | 90 00 | |

ONTARIO REFORMATORY INDUSTRIES, GUELPH, ONT.—*Continued.*

| | | |
|---|---|---|
| 59160—Brooms | $50 00 | |
| 60645— " | 56 25 | |
| | | $310 75 |

THE O'BRIEN MINE, COBALT, ONT.

| | | |
|---|---|---|
| 57377—Claim No. 9883, overcharge on silver ore | $186 05 | |
| 62056—Claim No. 12323, damage and loss 7 carboys acid | 35 00 | |
| | | $221 05 |

MR. J. J. O'HANDLEY, NORTH COBALT, ONT.

| | | |
|---|---|---|
| 57379—Claim No. 10241, loss account shortage household goods.. | $10 78 | |
| | | $10 78 |

JAS. A. OGILVY & SONS, MONTREAL, QUE.

| | | |
|---|---|---|
| 57498—Flags | $44 28 | |
| 58420— " | 10 98 | |
| 58945— " | 17 46 | |
| 59156—Linoleum | 20 00 | |
| 60778—Flags | 110 88 | |
| 61941— " | 45 00 | |
| | | $248 60 |

O'BRIEN & MARTIN, MONTREAL, QUE.

| | | |
|---|---|---|
| 58061—Claim No. 10552, overcharge freight on coal | $5 76 | |
| 58065—Claim No. 10552, overcharge freight on coal | 40 | |
| | | $6 16 |

OFFICIAL ANNUAL LABOUR REVIEW, TORONTO, ONT.

| | | |
|---|---|---|
| 58707—Advertising | $25 00 | |
| | | $25 00 |

OTLEY PAINT MFG. CO., CHICAGO, ILL.

| | | |
|---|---|---|
| 58947—Cement | $15 90 | |
| 60605— " | 17 10 | |
| 63031— " | 17 25 | |
| | | $50 25 |

J. A. O'DONNELL, ENGINEERING DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 58800—Travelling expenses | $22 00 | |
| 61164—Travelling expenses | 7 55 | |
| | | $29 55 |

ONTARIO WIND ENGINE & PUMP CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 59014—Flag poles | $648 00 | |
| | | $648 00 |

OKLAHOMA, NEW MEXICO & PACIFIC RAILWAY CO., ARDMORE, OKLA.

| | | |
|---|---|---|
| 59304—Car repairs | $1 41 | |
| | | $1 41 |

THOMAS W. OFFEN, RIVERS, MAN.

| | | |
|---|---|---|
| 59881—Claim No. 11520, loss account baggage burned | $100 00 | |
| | | $100 00 |

ONEIDA NATIONAL CHUCK COMPANY, ONEIDA, N.Y.

| | | |
|---|---|---|
| 60601—Drill chuck repairs | $2 33 | |
| | | $2 33 |

THE OSTER MANUFACTURING COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 60603—Dies | $2 81 | |
| | | $2 81 |

OREGON SHORT LINE RAILROAD COMPANY, SALT LAKE CITY, UTAH.

| | | |
|---|---|---|
| 60106—Car repairs | $0 87 | |
| | | $0 87 |

OFFICIAL LIST OF OPEN & PREPAY STATIONS, ST. LOUIS, MO.

| | | |
|---|---|---|
| 60378—Supplements to list No. 15 | $1 33 | |
| 61427—Supplements to list No. 16 | 3 30 | |
| 62295—Tariffs | 1 58 | |
| | | $6 21 |

OWEN SOUND WIRE FENCE COMPANY, LIMITED, OWEN SOUND, ONT.

| | | |
|---|---|---|
| 60776—Wire, staples, fence | $817 36 | |
| 61754—Fence gates | 2,826 00 | |
| 62411—Fence wire | 964 84 | |
| | | $4,608 20 |

OTIS FENSOM ELEVATOR COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 61600—Hand wheel, drum, screw | $21 65 | |
| 62958—Hand wheel, pinion | 12 00 | |
| | | $33 65 |

ONTARIO SPRING BED & MATTRESS CO., LIMITED, LONDON, ONT.

| | | |
|---|---|---|
| 61752—Brooms | $3 35 | |
| 62521— " | 33 50 | |
| 62726— " | 33 50 | |
| | | $70 35 |

OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY, PORTLAND, ORE.

| | | |
|---|---|---|
| 61870—Car repairs | $2 73 | |
| | | $2 73 |

E. O'BLIN, COBALT, ONT.

| | | |
|---|---|---|
| 62904—Claim No. 11569, alleged loss scrap brass | $22 08 | |
| | | $22 08 |

THE PENNSYLVANIA RAILROAD COMPANY, PHILADELPHIA, PA.

| | |
|---|---|
| 56537—Car repairs | $59 82 |
| 56629— " " | 17 33 |
| 56616— " " | 58 67 |
| 56914— " service balance | 21 95 |
| 57252— " repairs | 31 10 |
| 58263— " service balance | 81 00 |
| 58413— " repairs | 31 18 |
| 58202— " service balance | 220 70 |
| 59349— " service balance | 297 70 |
| 59533— " repairs | 38 01 |
| 59308— " " | 60 70 |
| 59310— " " | 10 49 |
| 59312— " " | 3 28 |
| 59360— " " | 1 87 |
| 59674— " " service balance | 468 00 |

THE PENNSYLVANIA RAILROAD COMPANY, ETC.—*Continued.*

| | | |
|---|---|---|
| 59865—Ticket balance | 15 10 | |
| 59919—Car repairs | 3 61 | |
| 60047— " repairs | 6 21 | |
| 60309— " service balance | 744 70 | |
| 60433— " repairs | 12 28 | |
| 60445—Claim | 124 48 | |
| 59820—Two first class fares, Philadelphia to Atlantic City and return | 2 50 | |
| 59974—Car repairs | 16 13 | |
| 60056— " " | 79 82 | |
| 60380— " " | 87 | |
| 60570— " service balance | 294 10 | |
| 61177—Claim | 4 98 | |
| 61387—Car repairs | 59 00 | |
| 61797— " service balance | 199 35 | |
| 61108— " repairs | 93 00 | |
| 61110— " repairs | 30 88 | |
| 61822—Claim | 6 15 | |
| 61874—Car repairs | 26 71 | |
| 61926— " " | 31 30 | |
| 62004— " " | 28 90 | |
| 62028— " " | 1 70 | |
| 62194— " service balance | 56 30 | |
| 62903— " " | 168 35 | |
| 63103—Claims | 4 40 | |
| 63199— " | 2 38 | |
| 63528—Car service balance | 258 75 | |
| 63634— " repairs | 51 17 | |
| 63782— " repairs | 44 64 | |
| | | $3,751 56 |

PITTSBURGH & LAKE ERIE RAILROAD COMPANY, PITTSBURGH, PA.

| | | |
|---|---|---|
| 56539—Car repairs | $11 17 | |
| 56981— " " | 28 | |
| 59531— " " | 19 42 | |
| 60049— " " | 22 93 | |
| 60058— " " | 6 60 | |
| 61313— " " | 16 51 | |
| 61637—Claim No. 10987, loss two steel rails | 1 15 | |
| 62006—Car repairs | 29 09 | |
| | | $107 15 |

PERE MARQUETTE RAILROAD COMPANY, DETROIT, MICH.

| | |
|---|---|
| 56541—Car repairs | $3 23 |
| 56667—Claim No. 10257, overcharge on latches, etc. | 2 10 |
| 57127—Car repairs | 2 81 |
| 56912— " service balance | 1 80 |
| 57258— " repairs | 2 70 |
| 58071—Claim No. 10206, damage to sugar | 1 10 |
| 58259—Car service balance | 34 20 |
| 58415— " repairs | 2 54 |
| 58198— " service balance | 50 80 |
| 59345— " service balance | 77 80 |
| 59314— " repairs | 2 22 |
| 59670— " service balance | 74 25 |
| 59921— " repairs | 5 66 |
| 60305— " service balance | 83 70 |
| 59976— " repairs | 3 51 |
| 60568— " service balance | 34 65 |
| 61463— " repairs | 55 55 |
| 61795— " service balance | 56 90 |
| 61876— " repairs | 6 34 |
| 61924— " repairs | 18 33 |

PERE MARQUETTE RAILROAD COMPANY, DETROIT, MICH.—*Continued.*

| | | |
|---|---|---|
| 62192—Car service balance | $25 65 | |
| 62899— " " " | 50 40 | |
| 63518— " " | 45 00 | |
| | | $641 24 |

PENNSYLVANIA COMPANY, PITTSBURGH, PA.

| | | |
|---|---|---|
| 56577—Claims | $12 43 | |
| 58069—Claim | 4 84 | |
| 58329—Ticket balance | 3 86 | |
| | | $21 13 |

THE PINTSCH COMPRESSING COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56851—Gas | $220 95 | |
| 56692— " | 113 41 | |
| 58449— " | 119 12 | |
| 59029— " | 250 40 | |
| 59603— " | 134 22 | |
| 60789*a*— " | 229 61 | |
| 60660— " | 100 50 | |
| 62043— " | 90 95 | |
| 61796— " | 91 30 | |
| 63636— " | 158 61 | |
| | | $1,509 07 |

PILKINGTON BROTHERS, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56903—Glass | $121 90 | |
| 56994— " | 24 34 | |
| 57507— " and resilvering mirrors | 14 94 | |
| 57605— " | 163 68 | |
| 57660— " | 113 51 | |
| 57810— " | 16 53 | |
| 58569— " | 152 75 | |
| 58591— " | 61 81 | |
| 58757— " | 408 03 | |
| 58710— " | 69 15 | |
| 58884— " | 2 23 | |
| 60112— " | 14 41 | |
| 61075— " | 429 43 | |
| 62377— " | 93 32 | |
| | | $1,686 03 |

THE THOMAS PINK COMPANY, PEMBROKE, ONT.

| | | |
|---|---|---|
| 56905—Peaveys, etc. | $18 52 | |
| 58755— " | 13 01 | |
| 61945— " | 7 44 | |
| 62225— " | 14 89 | |
| | | $53 86 |

PEORIA & PEKIN UNION RAILWAY COMPANY, PEORIA, ILL.

| | | |
|---|---|---|
| 56979—Car repairs | $0 29 | |
| 57256— " | 1 90 | |
| 61872— " | 7 84 | |
| | | $10 03 |

P. PICARD, LINEMAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57075—Travelling expenses | $12 25 | |
| 56972— " | 9 65 | |
| 57735— " | 3 80 | |
| 58270— " | 5 35 | |
| 58785— " | 6 65 | |
| 59340— " | 5 10 | |

P. Picard, Lineman, North Bay, Ont.—*Continued.*

| | | |
|---|---|---|
| 59955—Travelling expenses | $10 30 | |
| 60278— " | 6 70 | |
| 61543— " | 6 60 | |
| 62629— " | 7 90 | |
| 62782— " | 12 30 | |
| | | $86 60 |

Philadelphia & Reading Railway Company, Philadelphia, Pa.

| | | |
|---|---|---|
| 57125—Car repairs | $5 70 | |
| 57100—Claim No. 10285—Loss account, damage to gear guards.. | 2 63 | |
| 57254—Car repairs | 1 83 | |
| 58257— " service balance | 23 40 | |
| 58403— " repairs | 76 | |
| 58196— " service balance | 71 10 | |
| 59343— " " | 16 65 | |
| 59306— " repairs | 2 10 | |
| 59668— " service balance | 43 65 | |
| 59777— " repairs | 45 66 | |
| 59917— " " | 9 23 | |
| 60303— " service balance | 54 45 | |
| 60382— " repairs | 2 87 | |
| 60564— " service balance | 37 80 | |
| 61315— " repairs | 11 54 | |
| 61793— " service balance | 52 20 | |
| 61922— " repairs | 1 81 | |
| 62190— " service balance | 31 50 | |
| 62489— " repairs | 1 90 | |
| 63632— " " | 23 70 | |
| | | $440 48 |

Wm. Pollock & Son, Englehart, Ont.

| | | |
|---|---|---|
| 57185—Spruce | $4 80 | |
| 58463—Fence posts | 13 12 | |
| | | $17 92 |

The Hiram L. Piper Co., Limited, Montreal, P.Q.

| | | |
|---|---|---|
| 57187—Burners for heaters and freight car heaters | $53 50 | |
| 57510—Railway supplies | 243 05 | |
| 57937—Signal burners | 11 40 | |
| 58436—Wicks | 1 00 | |
| 58955—Switch lamps | 57 40 | |
| 63007—Founts, burners, wick | 12 73 | |
| | | $379 08 |

Pearce Meat Company, Limited. North Bay, Ont.

| | | |
|---|---|---|
| 57283—Meat | $77 06 | |
| 57504— " | 20 15 | |
| 57965— " | 212 09 | |
| 58426— " | 36 88 | |
| 59005— " | 35 00 | |
| 60609— " | 46 08 | |
| 60784— " | 27 28 | |
| 62656— " | 4 46 | |
| | | $459 00 |

Power Specialty Company, New York, N.Y.

| | | |
|---|---|---|
| 57189—Pump parts | $39 50 | |
| 58623—Gate valve | 52 47 | |
| | | $91 97 |

PRATT & WHITNEY CO. OF CANADA, LIMITED, DUNDAS, ONT.

| | | |
|---|---|---|
| 57285—Drill chuck cap and arbor | $6 46 | |
| 58432—Taps and drills | 7 70 | |
| 60649—Taps and drills | 12 54 | |
| 60318—Sleeves | 6 84 | |
| 60782—Drills, taps | 16 85 | |
| 60916—Sleeves | 5 71 | |
| 61247—Drills, etc. | 46 42 | |
| 61602—Drills | 2 49 | |
| 61794—Drills and taps | 33 78 | |
| 63039—Taps, drills, dies, etc. | 69 59 | |
| 62654—M. T. S. drills | 2 19 | |
| 62962—Drills and taps | 4 55 | |
| 63308—Shank drills | 127 50 | |
| | | $342 62 |

THE N. L. PIPER RAILWAY SUPPLY CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 57287—Oil feeders, mop rags, supplies, etc. | $140 29 | |
| 57508—Railway supplies | 50 28 | |
| 57941—Lanterns, cans, mop rags, etc. | 74 83 | |
| 58428—Supplies | 155 48 | |
| 59009—Lamp fonts, burners, etc. | 139 57 | |
| 59099—Oil cans, wicks, etc. | 84 30 | |
| 59168—Wicks, burners | 307 34 | |
| 60611—Oil feeders, lamp hoods, etc. | 97 30 | |
| 60320—Lenses | 26 40 | |
| 60802—Oil feeders, squirt cans | 131 95 | |
| 61943—Lamps, headlights | 193 67 | |
| 61526—Pail, cans, globes, etc. | 77 75 | |
| 63035—Globes, brackets, lanterns | 160 70 | |
| 62994—Mop rags, sticks, etc. | 40 30 | |
| | | $1,680 16 |

PITTSBURG SPRING STEEL CO., PITTSBURG, PA.

| | | |
|---|---|---|
| 57289—Driving springs | $54 70 | |
| 58438— " | 50 32 | |
| 68856— " | 551 33 | |
| 58932— " | 217 44 | |
| 60613— " | 320 44 | |
| 61029— " | 217 15 | |
| 61251— " | 15 51 | |
| 62525— " | 348 25 | |
| 62660— " | 157 69 | |
| | | $1,932 83 |

THE PLANET, CHATHAM, ONT.

| | | |
|---|---|---|
| 57291—Forms | $15 38 | |
| 57506— " | 8 50 | |
| 57939— " | 28 70 | |
| 58434— " | 208 60 | |
| 59003— " | 47 50 | |
| 59166— " | 163 62 | |
| 60615— " | 131 08 | |
| 60800— " | 6 00 | |
| 61249— " | 13 50 | |
| 61716— " | 265 14 | |
| 63037— " | 35 75 | |
| 62658— " | 11 50 | |
| 62964— " | 46 25 | |
| 63306— " | 27 53 | |
| | | $1,009 05 |

PATERSON MFG. COMPANY, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56588—Felt, pitch and coal tar | $149 12 | |
| 57601—Building paper | 42 07 | |
| 58666—Tarred felt and roofing | 68 48 | |
| 58882—Roofing | 180 80 | |
| 59677— " | 51 45 | |
| 60140— " felt, etc. | 107 07 | |
| 61073— " | 277 18 | |
| 61788—Spruce, sheathing | 25 40 | |
| 62413—Felt, roofing, etc. | 165 07 | |
| | | $1,066 64 |

GEO. PORTER, HEASLIP, ONT.

| | | |
|---|---|---|
| 56806—Donation account—pulpwood alleged destroyed by fire .. | $19 25 | |
| | | $19 25 |

PITTSBURG, SHAWMUTT & NORTHERN RAILROAD, ST. MARY'S, PA.

| | | |
|---|---|---|
| 56916—Car service balance | $19 35 | |
| 57142—Refund per diem | 45 | |
| 58261—Car service balance | 5 40 | |
| 58200— " " | 14 40 | |
| 59347— " " | 2 70 | |
| 59672— " " | 7 65 | |
| 60307— " " | 8 55 | |
| 60568— " " | 45 | |
| 62901— " " | 5 85 | |
| 63520— " " | 27 90 | |
| | | $92 70 |

PEERLESS TRANSIT LINE, CLEVELAND, O.

| | | |
|---|---|---|
| 56918—Car service Balance | $3 79 | |
| 58206— " " | 3 79 | |
| 59353— " " | 1 90 | |
| 59678— " " | 1 90 | |
| 60574— " " | 7 59 | |
| 61801— " " | 7 59 | |
| 62198— " " | 4 83 | |
| 62907— " " | 14 14 | |
| 63532— " " | 17 08 | |
| | | $62 61 |

PAGE-HERSEY IRON TUBE & LEAD CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 56992—Pipe | $78 32 | |
| 57603— " | 117 19 | |
| 57804— " | 78 45 | |
| 58571— " | 148 09 | |
| 58880— " | 6 73 | |
| 59983— " | 22 87 | |
| 60647— " | 93 15 | |
| 60146— " | 241 73 | |
| 61071— " | 147 53 | |
| 62227— " | 126 87 | |
| 62415— " | 110 99 | |
| 62665— " | 239 83 | |
| 63206— " | 17 19 | |
| | | $1,428 94 |

PITTSBURG, CHARTIERS & YOUGHIOGHENY RY. COMPANY, PITTSBURG, PA.

| | | |
|---|---|---|
| 57102—Claim No. 9391—Overcharge on silver ore | $2 04 | |
| | | $2 04 |

F. C. Preston, Ltd., Haileybury, Ont.

| | | |
|---|---|---|
| 57104—Claim No. 10507—Loss account, damage to 3 lbs. butter.. | $0 96 | |
| 58981— " 10403—Loss account, shortage case matches.. | 4 50 | |
| 59902— " 10856—Loss account, shortage box butter .... | 15 30 | |
| 61414— " 11993—Loss, tin syrup ..... | 75 | |
| 62236— " 12977—Loss, coffee, account damage ..... | 54 | |
| | | $22 05 |

Porter & Company, Elk Lake, Ont.

| | | |
|---|---|---|
| 57106—Claim No. 10402—Loss account, shortage, raisins ..... | $0 90 | |
| 58073—Claim No. 10576—Loss account, shortage, grapes ..... | 1 00 | |
| | | $1 90 |

Pomeroy & Fischer, New York, N.Y.

| | | |
|---|---|---|
| 57502—Paints ..... | $26 10 | |
| | | $26 10 |

The Pullman Company, Chicago, Ill.

| | | |
|---|---|---|
| 57512—Steel bulkheads and freight charges ..... | $214 66 | |
| 57620—Steel coaches and cars ..... | 51,060 00 | |
| 58510—Lighting pullmans ..... | 72 29 | |
| | | $51,346 95 |

Wm. Potter & Son, Tottenham, Ont.

| | | |
|---|---|---|
| 57032—Claim No. 10692—Siding rebate ..... | $79 05 | |
| 57034—Claim No. 10692—Siding rebate ..... | 44 00 | |
| | | $123 05 |

A. J. Parr (G. F. & P. A.), North Bay, Ont.

| | | |
|---|---|---|
| 57561—Travelling expenses ..... | $19 20 | |
| 58603— " " ..... | 41 40 | |
| 58764— " " ..... | 23 85 | |
| 59857— " " ..... | 49 25 | |
| 60196— " " ..... | 25 90 | |
| 61069— " " ..... | 42 40 | |
| 61258— " " ..... | 15 95 | |
| 62239— " " ..... | 9 00 | |
| 62444— " " ..... | 14 85 | |
| 56751— " " ..... | 32 75 | |
| 56630— " " ..... | 15 90 | |
| 57700— " " ..... | 23 40 | |
| | | $313 85 |

Peerless Carbon & Ribbon Manufacturing Company, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 57943—Carbon paper ..... | $79 50 | |
| 58430— " ..... | 32 00 | |
| 58951— " ..... | 20 00 | |
| 60617— " ..... | 57 25 | |
| 61245—Pencils, etc. ..... | 45 25 | |
| 63033—Carbon ..... | 34 00 | |
| 62960—Stationery ..... | 58 50 | |
| | | $326 50 |

Hugh Park, Cobalt, Ont.

| | | |
|---|---|---|
| 58067—Claim No. 10540—loss account, damage to bottle water.. | $1 43 | |
| | | $1 43 |

A. H. Porter, Elk Lake, Ont.

| | | |
|---|---|---|
| 58119—Rent telephone office—Elk Lake | 60 00 | |
| 61429— " " | 70 00 | |
| | | $130 00 |

Pacific Fruit Express, San Francisco, Cal.

| | | |
|---|---|---|
| 58265—Car service balance | $7 17 | |
| 58204— " " | 1 90 | |
| 59351— " " | 11 57 | |
| 59676— " " | 3 83 | |
| 60572— " " | 7 62 | |
| 61799— " " | 5 56 | |
| 62196— " " | 6 80 | |
| 62905— " " | 18 27 | |
| 63530— " " | 18 50 | |
| | | $81 22 |

Porcupine Telephone Lines, Limited, South Porcupine, Ont.

| | | |
|---|---|---|
| 57768—Telephone rental—Timmins | $33 00 | |
| 60903— " " —South Porcupine | 48 45 | |
| 61294— " " —Schumacher and Timmins | 75 45 | |
| | | $156 90 |

L. Pelkie, Section Foreman, Thornloe, Ont.

| | | |
|---|---|---|
| 57878—Travelling expenses | $1 00 | |
| | | $1 00 |

H. Pilling, Machinist, North Bay, Ont.

| | | |
|---|---|---|
| 57880—Travelling expenses | $7 50 | |
| 58605— " " | 2 75 | |
| | | $10 25 |

Polar Refrigerator Line, Chicago, Ill.

| | | |
|---|---|---|
| 58208—Car service balance | $3 79 | |
| | | $3 79 |

The Pedlar People, Limited, Oshawa, Ont.

| | | |
|---|---|---|
| 58949—Galvanized iron | $41 63 | |
| 61604—Iron | 48 18 | |
| | | $89 81 |

H. Picard, North Bay, Ont.

| | | |
|---|---|---|
| 58953—Bacon and tomatoes | $3 63 | |
| 62523—Groceries | 1 06 | |
| | | $4 69 |

Preston Car & Coach Company, Limited, Preston, Ont.

| | | |
|---|---|---|
| 58804—Iron forgings, equalizers, etc. | $466 72 | |
| 62193—Hangers | 325 24 | |
| | | $791 96 |

A. Pullan, Englehart, Ont.

| | | |
|---|---|---|
| 58846—Claim No. 10709—loss account, damage to furniture | $3 00 | |
| 62319— " No. 11456—damage to marble table top | 5 90 | |
| | | $8 90 |

THE PANTASOTE COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 59164—Upholstery, agasote | $57 46 | |
| 60619—Agasote boards and war tax | 9 60 | |
| 62529— " " " | 21 01 | |
| 62966—War tax on material | 1 43 | |
| | | $89 50 |

PRATT & LITCHWORTH COMPANY, LIMITED, BRANTFORD, ONT.

| | | |
|---|---|---|
| 59170—Pins | $1 47 | |
| 61973—Castings | 5 25 | |
| 61792— " | 6 58 | |
| | | $13 30 |

ANDREW PRATT (M. P. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 59342—Travelling expenses | $7 35 | |
| 59707— " " | 9 80 | |
| | | $17 15 |

ROBT. PRENTICE, RELIEVING AGENT, NORTH BAY, ONT.

| | | |
|---|---|---|
| 59882—Travelling expenses | $10 75 | |
| 59884— " " | 3 25 | |
| | | $14 00 |

A. PLANT, COBALT, ONT.

| | | |
|---|---|---|
| 59412—Claim No. 10296—overcharge, fare, man in charge horses. | $2 85 | |
| | | $2 85 |

PERKINS, INCE & COMPANY, TORONTO.

| | | |
|---|---|---|
| 59506—Claim No. 11081—refund storage charges on pickles..... | $2 02 | |
| | | $2 02 |

PIEDMONT & NORTHERN RAILWAY COMPANY, CHARLOTTE, N.C.

| | | |
|---|---|---|
| 59680—Car service balance | $0 90 | |
| 60311— " " | 1 35 | |
| | | $2 25 |

G. E. PALMER, CLAIMS DEPARTMENT, NORTH BAY, ONT.

| | | |
|---|---|---|
| 59723—Travelling expenses | $14 30 | |
| 61465— " " | 12 50 | |
| 61648— " " | 21 35 | |
| 62203— " " | 29 15 | |
| 62464— " " | 38 10 | |
| | | $115 40 |

PORCUPINE ADVANCE, TIMMINS, ONT.

| | | |
|---|---|---|
| 59755—Advertisement | $3 20 | |
| 61128— " | 8 50 | |
| | | $11 70 |

PRESSED PRISM PLATE GLASS COMPANY, MORGANTOWN, W. VA.

| | | |
|---|---|---|
| 60607—Glass | $18 00 | |
| | | $18 00 |

CHAS. PIERCE & SONS, LIMITED, TIMMINS, ONT.

| | | |
|---|---|---|
| 59900—Claims Nos. 11030, 11114—damage to onions and fruit by frost | $15 35 | |
| 60871—Claim No. 11077—loss account, shortage apricots | 55 | |
| 60941— " No. 11152—loss account, lamp chimney in transit | 4 15 | |
| | | $20 05 |

THOMAS POTTER, McCOOL P.O., ONT.

| | | |
|---|---|---|
| 60064—Ties | $130 38 | |
| | | $130 38 |

H. S. PRICE, WINNIPEG, MAN.

| | | |
|---|---|---|
| 60346—Claim No. 11731—Loss account, baggage burned | $100 00 | |
| | | $100 00 |

W. J. PARSONS, NORTH BAY, ONT.

| | | |
|---|---|---|
| 60962—Glasses | $0 50 | |
| | | $0 50 |

HERBERT PETERS, COBALT, ONT.

| | | |
|---|---|---|
| 60943—Claim No. 10063—o/c in freight, potatoes | $16 94 | |
| 63184— " No. 10058—o/c weight, 13 cars potatoes | 95 12 | |
| | | $112 06 |

E. PETERS, EARLTON P.O., ONT.

| | | |
|---|---|---|
| 61063—Ties | $47 70 | |
| | | $47 70 |

PIPE & PRESLEY, COBALT, ONT.

| | | |
|---|---|---|
| 61179—Claim No. 11635—loss, case soap | $3 85 | |
| | | $3 85 |

TAYLOR PIPE, COBALT, ONT.

| | | |
|---|---|---|
| 61493—Claim No. 11624—loss account, syrup | $9 06 | |
| 61643— " No. 11633—damage to pickle equipment | 3 50 | |
| 62077— " No. 11634—loss sugar in transit | 8 31 | |
| 61820— " 12278—loss bottle olives, pickles and lime juice | 1 80 | |
| | | $22 67 |

GUSTAVE PERRAULT, YARDMAN, ENGLEHART, ONT.

| | | |
|---|---|---|
| 62025—Award W. C. B. *re* alleged injuries | $46 20 | |
| 61200— " " " " " | 57 75 | |
| 62436— " " " " " | 377 70 | |
| | | $481 65 |

E. H. PARMELEE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61758—Electrical fixtures | $16 44 | |
| 62296—Porc. tubes | 5 76 | |
| | | $22 20 |

PEASE FOUNDRY CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 61790—Set grates | $22 60 | |
| | | $22 60 |

C. H. Powell, Englehart, Ont.

| | | |
|---|---|---|
| 62300—Meat and groceries | $39 60 | |
| 62968—Provisions | 7 65 | |
| | | $47 25 |

Pittsburg Meter Company, East Pittsburg, Pa.

| | | |
|---|---|---|
| 62417—Register, studs, etc. | $28 50 | |
| | | $28 50 |

Public Service Cup Co. of Canada, Limited, Ottawa, Can.

| | | |
|---|---|---|
| 62527—Cups | $11 00 | |
| | | $11 00 |

Geo. W. Powles, Machinist, North Bay, Ont.

| | | |
|---|---|---|
| 62378—Award W. C. B. *re* alleged injuries received | $46 23 | |
| 62414—Award W. C. B. *re* alleged injuries received | 11 01 | |
| | | $57 24 |

Palmer & Smith, Earlton, Ont.

| | | |
|---|---|---|
| 62906—Claim No. 12718, alleged loss sugar | $1 72 | |
| | | $1 72 |

P. Pastene & Company, Inc., Montreal, Que.

| | | |
|---|---|---|
| 62996—Claim No. 12624, alleged loss, olives and canned goods | $29 00 | |
| 63180—Claim No. 12580—Loss groceries, fire, Cochrane | 111 55 | |
| | | $140 55 |

Mrs. W. E. Picard, Gananoque, Ont.

| | | |
|---|---|---|
| 63234—Claim No. 11781, alleged loss lumber in transit | $3 00 | |
| | | $3 00 |

Prest-O-Lite Company, Merritton, Ont.

| | | |
|---|---|---|
| 63310—Acetylene | $36 51 | |
| | | $36 51 |

Queen's Hotel, Cochrane, Ont.

| | | |
|---|---|---|
| 56727—Board and lodging | $7 50 | |
| 59461— " | 11 50 | |
| 60020— " and lodging | 3 00 | |
| | | $22 00 |

G. W. Quantz, Cane P.O., Ont.

| | | |
|---|---|---|
| 57226—Donation account loss cow alleged killed | $50 00 | |
| | | $50 00 |

Quebec Central Railway Company, Sherbrooke, Que.

| | | |
|---|---|---|
| 57260—Car repairs | $1 62 | |
| 60315— " service balance | 4 50 | |
| 61112— " repairs | 2 45 | |
| 62908—Claim No. 10363, outstanding account, error billing | 2 00 | |
| | | $10 57 |

Quebec, Montreal & Southern Ry. Company, New York, N.Y.

| | | |
|---|---|---|
| 57332—Car service balance | $0 45 | |
| 58267— " " " | 9 90 | |
| 58210— " " " | 14 40 | |

QUEBEC, MONTREAL & SOUTHERN RAILWAY COMPANY, ETC.—*Continued.*

| | | |
|---|---|---|
| 59355—Car service balance | $0 90 | |
| 59535— " repairs | 66 | |
| 59682— " service balance | 17 55 | |
| 60313— " " " | 19 80 | |
| 60576— " " " | 17 55 | |
| 62909— " " " | 1 35 | |
| 63534— " " " | 7 65 | |
| | | $90 21 |

QUEBEC RAILWAY, LIGHT & POWER COMPANY, QUEBEC, QUE.

| | | |
|---|---|---|
| 62232—Ticket balance | $201 00 | |
| | | $201 00 |

MCGIVEN QUIRT, NIPISSING JCT., ONT.

| | | |
|---|---|---|
| 62806—Ties | $9 00 | |
| | | $9 00 |

QUEEN VICTORIA MEMORIAL HOSPITAL, NORTH BAY, ONT.

| | | |
|---|---|---|
| 63366—Donation | $100 00 | |
| | | $100 00 |

RAILWAY MAIL CLERKS ASSOCIATION, TORONTO.

| | | |
|---|---|---|
| 56457—Advertising in Railway Mail Clerks Review, 1915 | $15 00 | |
| 61168—Advertising in Railway Mail Clerks Review, 1916 | 15 00 | |
| | | $30 00 |

S. H. RYAN, TRAINMASTER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56609—Travelling expenses | $13 20 | |
| 56881— " " | 18 10 | |
| 56974— " " | 20 10 | |
| 57885— " " | 32 55 | |
| 58418— " " | 30 65 | |
| 58787— " " | 40 85 | |
| 59346— " " | 23 65 | |
| 60105— " " | 14 05 | |
| 60280— " " | 20 65 | |
| 61865— " " | 13 70 | |
| 62511— " " | 25 60 | |
| 62460— " " | 17 60 | |
| | | $270 70 |

M. ROTHSCHILD, COCHRANE, ONT.

| | | |
|---|---|---|
| 56669—Claim No. 9654, damage to furniture | $15 50 | |
| 58983— " No. 8811, " " | 17 50 | |
| 63201— " No. 12620, loss liquor | 2 06 | |
| | | $35 06 |

THE JAMES ROBERTSON COMPANY, LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 56705—Sinks | $10 98 | |
| 56907—Plates | 75 55 | |
| 56584—Steel plates | 55 78 | |
| 57662—Iron | 10 82 | |
| 58573—Plates | 56 71 | |
| 59176—Grey fuller balls | 64 | |
| 59681—Seneca steel | 39 98 | |
| 59985—Plates | 155 27 | |
| 60114—Iron | 12 47 | |
| 60142—Plates | 213 34 | |
| 61077— " | 155 00 | |
| 61977— " | 126 22 | |

THE JAMES ROBERTSON COMPANY, LIMITED, ETC.—*Continued.*

| | | |
|---|---|---|
| 62419—Plates | $63 22 | |
| 62423—Hardware | 78 95 | |
| 63398—Iron plates | 45 66 | |
| 62684—Steel plates | 110 88 | |
| 63006—Buffer plates | 82 62 | |
| | | $1,294 09 |

J. W. RICHARDSON, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56909—Door hangers, etc. | $18 91 | |
| 56998—Globe valves | 1 16 | |
| 57607—Mattresses | 21 82 | |
| 57664— " and springs | 45 10 | |
| 57812— " | 14 55 | |
| 58709— " | 14 55 | |
| 59679— " | 14 55 | |
| 59987—Alabastine | 3 88 | |
| 60252—Alabastine | 4 37 | |
| 61606—Mattresses, hinges, etc. | 80 22 | |
| 62598—Washboard, spoons, etc. | 5 04 | |
| 63204—Blankets | 19 69 | |
| | | $243 84 |

THE RATCLIFF PAPER CO., LIMITED, TORONTO.

| | | |
|---|---|---|
| 56911—Twine | $15 44 | |
| 57509— " | 7 42 | |
| 58444— " | 5 25 | |
| 58541—Wrapping paper and holder | 4 61 | |
| 59076—Twine | 24 50 | |
| 61496— " | 37 70 | |
| | | $94 92 |

RUTLAND RAILROAD COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56983—Car repairs | $0 36 | |
| 56920—Car service balance | 50 | |
| 56952—Ticket balance | 258 79 | |
| 57262—Car repairs | 2 79 | |
| 58331—Ticket balance | 49 83 | |
| 58417—Car repairs | 49 | |
| 58212—Car service balance | 5 40 | |
| 58262— " " " | 90 60 | |
| 59357— " " " | 7 20 | |
| 59419— " " " | 6 76 | |
| 59537— " repairs | 57 | |
| 59684— " service balance | 14 40 | |
| 60317— " " " | 11 70 | |
| 60385—Ticket balance | 14 96 | |
| 60578—Car service balance | 5 85 | |
| 61389—Car repairs | 56 | |
| 61845—Ticket balance | 14 01 | |
| 61878—Car repairs | 5 27 | |
| 62959—Ticket balance | 57 89 | |
| 63576—Ticket balance | 4 67 | |
| | | $552 60 |

H. L. RODGERS, MECHANICAL ENGINEER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57063—Travelling expenses | $92 20 | |
| 57671— " " | 79 05 | |
| 59667— " " | 70 45 | |
| 61595— " " | 95 80 | |
| 62157— " " | 45 00 | |
| 62396— " " | 70 65 | |
| | | $453 15 |

RICHARDSON, BOND & WRIGHT, LIMITED. OWEN SOUND, ONT.

| | | |
|---|---|---|
| 57301—Ledgers, registers and forms | $68 65 | |
| 57518—Accounting books and forms | 72 50 | |
| 57945—Accounting books and forms | 116 90 | |
| 58440—Binders and forms | 133 60 | |
| 59101—Forms | 115 45 | |
| 59103—Forms | 26 95 | |
| 60627—Rule books | 13 60 | |
| 60717—Stationery | 188 90 | |
| 60856—Forms | 78 20 | |
| 61597—Forms | 25 45 | |
| 61608—Cards and forms | 100 70 | |
| 61650—Forms | 14 25 | |
| 63041—Forms | 74 40 | |
| 63004—Transfer cards | 388 15 | |
| 63314—Forms | 21 05 | |
| | | $1,438 75 |

ROYAL POLISHES CO., MONTREAL, QUE.

| | | |
|---|---|---|
| 57303—Metal polish | $16 20 | |
| 57514— " " | 16 20 | |
| 57967— " " | 16 20 | |
| 57828— " " | 16 20 | |
| 58448— " " | 8 10 | |
| 59053— " " | 12 15 | |
| 59178— " " | 12 15 | |
| 60324— " " | 16 20 | |
| 60804— " " | 12 15 | |
| 61530— " " | 16 20 | |
| 61760— " " | 16 20 | |
| 63047— " " | 8 10 | |
| | | $166 05 |

RICE LEWIS & SON, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57305—Screw drivers and glass cutters | $14 05 | |
| 57522—Steel and emery dresser | 273 46 | |
| 58446—Hardware | 34 70 | |
| 58999—Springs, washers, etc. | 9 93 | |
| 59172—Steel, pliers, etc. | 221 85 | |
| 60621—Augers, steel, roofing, etc. | 50 64 | |
| 60854—Steel, gouges, etc. | 40 11 | |
| 60918—Spring steel, pipe cutter | 30 83 | |
| 61253—Post | 12 75 | |
| 61975—Stocks, dies | 23 00 | |
| 61528—Steel | 566 28 | |
| 61764—Die, nuts, tape lines | 25 50 | |
| 62535—Level glasses | 1 47 | |
| 63043—Hardware | 22 72 | |
| 62416—Steel | 333 75 | |
| 63002—Hardware supplies | 49 50 | |
| 63312—Latches | 9 30 | |
| | | $1,719 84 |

I. RICE, IROQUOIS FALLS, ONT.

| | | |
|---|---|---|
| 57381—Claim No. 10335, loss account damage to fruit in transit.. | $1 20 | |
| 58075— " " 10463 " " damage to building paper.. | 1 01 | |
| 58830— " " 10864 " " case Epsom salts | 1 60 | |
| 59510— " " 10690 " " damage to sausages | 2 20 | |
| 62655— " " 12468 " " rice | 24 25 | |
| 62570— " " 12144 " " salt | 94 | |
| 62910— " " 12186 " " meat | 1 64 | |
| 63714— " " 12154 " " groceries | 2 68 | |
| | | $35 52 |

W. D. Rodgers, Charlton, Ont.

| | | |
|---|---|---|
| 57383—Claim No. 10154—loss account, shortage barrel H.H. goods | $5 00 | |
| | | $5 00 |

William T. Robson Company, Montreal, Que.

| | | |
|---|---|---|
| 56538—Time-tables, folders, maps, engravings, etc. | $1,184 01 | |
| | | $1,184 01 |

Russia Cement Company, Gloucester, Mass.

| | | |
|---|---|---|
| 56582—Liquid glue | $25 09 | |
| 57687— " | 12 54 | |
| 61762— " | 27 20 | |
| 62421— " | 13 33 | |
| | | $78 16 |

Railway Age Gazette, New York, N.Y.

| | | |
|---|---|---|
| 56694—Subscriptions | $14 00 | |
| 57210— " | 6 00 | |
| 58545— " | 6 00 | |
| 59757— " | 6 00 | |
| 62533— " | 6 00 | |
| | | $38 00 |

Remington Typewriter Company, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 56726—Typewriter and inspection | $62 00 | |
| 58451—Repairing typewriter | 12 20 | |
| 57848—Carbon paper | 7 49 | |
| 58543— " | 2 00 | |
| 59486— " | 7 50 | |
| | | $91 19 |

Railway Equipment & Publication Company, New York, N.Y.

| | | |
|---|---|---|
| 56808—Registration rolling stock equipment | $96 00 | |
| 57770—Representation in "Railway Line Clearance" | 10 00 | |
| | | $106 00 |

Thomas Robertson & Company, Limited, Montreal, Que.

| | | |
|---|---|---|
| 56996—Copper | $6 93 | |
| 58575—Wash basins | 5 88 | |
| | | $12 81 |

Railway Mechanical Computing Tables, Lakewood, Ohio.

| | | |
|---|---|---|
| 57516—Computing tables | $2 00 | |
| | | $2 00 |

The Renfrew Machinery Company, Limited, Renfrew, Ont.

| | | |
|---|---|---|
| 57520—Truck scale | $25 20 | |
| | | $25 20 |

M. J. Roche, Timmins, Ont.

| | | |
|---|---|---|
| 57533—Repairing clocks | $2 75 | |
| 62538— " " | 2 00 | |
| | | $4 75 |

RYRIE BROS., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57947—"Safety First" buttons | $17 15 | |
| 58442— " " | 35 | |
| | | $17 50 |

RAILWAY AND MARINE WORLD, TORONTO, ONT.

| | | |
|---|---|---|
| 58121—Subscriptions | $28 00 | |
| | | $28 00 |

MRS. HENRY ROSE, HOMER P.O., ONT.

| | | |
|---|---|---|
| 58463—Ties | $31 14 | |
| | | $31 14 |

THE ROCK ISLAND EMPLOYEES' MAGAZINE, CHICAGO, ILL.

| | | |
|---|---|---|
| 57850—Subscription | $1 50 | |
| | | $1 50 |

THOMAS ROSS, MASTER MECHANIC, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57882—Expenses—travelling | $9 80 | |
| | | $9 80 |

ROBERTS & SCHAEFER COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 58106—Equipment for coaling plant | $197 00 | |
| 59055—Time and expense *re* coaling plant | 104 47 | |
| | | $301 47 |

BLAIR RUSHTON, BEAUCHAMP, ONT.

| | | |
|---|---|---|
| 58593—Ties | $117 01 | |
| 61500— " | 63 06 | |
| 61500— " | 65 90 | |
| | | $245 97 |

T. RANSON, M. P. DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 58607—Travelling expenses | $7 05 | |
| | | $7 05 |

RAND AVERY SUPPLY COMPANY, BOSTON, MASS.

| | | |
|---|---|---|
| 58957—Punches | $30 00 | |
| | | $30 00 |

THE RATHBUN MATCH COMPANY, LIMITED, DESERONTO, ONT.

| | | |
|---|---|---|
| 59007—Matches | $3 80 | |
| 60623— " | 3 80 | |
| | | $7 60 |

WM. RENNIE COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59011—Seeds | $31 74 | |
| 59174—Lawn seeder | 4 25 | |
| 63000—Tulips | 13 38 | |
| | | $49 37 |

H. T. ROUTLEY, HUNTINGTON, QUE.

| | | |
|---|---|---|
| 58678—Purchase price house and lot, Town of Haileybury | $1,750 00 | |
| | | $1,750 00 |

ROUS & MANN, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58712—Prints of maps | $11 00 | |
| 59814—Folders | 111 00 | |
| 60006— " | 125 00 | |
| 61296— " | 487 50 | |
| 62536—Slips *re* passes | 10 75 | |
| 62728—Composition for changes on folders | 7 60 | |
| | | $752 85 |

RAILWAY SIGNAL ASSOCIATION, BETHLEHEM, PA.

| | | |
|---|---|---|
| 58788—Additions and revisions, one set | $1 00 | |
| | | $1 00 |

ROOFERS' SUPPLY COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58832—Claim No. 10303—overcharge in weight shipment iron.... | $4 94 | |
| | | $4 94 |

ALFRED ROGERS, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59508—Claim No. 9897—loss account, shortage cement sacks... | $5 26 | |
| | | $5 26 |

MRS. JOHN ROSS, KELLIHER, SASK.

| | | |
|---|---|---|
| 59883—Claim No. 11428—loss account, baggage burned | $100 00 | |
| | | $100 00 |

RICHMOND, FREDERICKSBURG & POTOMAC R.R. COMPANY, RICHMOND, VA.

| | | |
|---|---|---|
| 60319—Car service balance | $7 65 | |
| | | $7 65 |

A. C. RORABECK, NORTH BAY, ONT.

| | | |
|---|---|---|
| 60625—Tartaric acid | $1 75 | |
| 63045—Bedbug poison | 1 50 | |
| 63316—Oxalic acid | 7 50 | |
| | | $10 75 |

RAILWAY & LOCOMOTIVE ENGINEERING, NEW YORK, N.Y.

| | | |
|---|---|---|
| 60022—Subscription | $2 00 | |
| 63638— " | 2 00 | |
| | | $4 00 |

REDFIELD-KENDRICK-ODELL COMPANY, INC., NEW YORK, N.Y.

| | | |
|---|---|---|
| 60322—Corrections in T. & N. O. map | $14 00 | |
| | | $14 00 |

STEVEN ROBINSON, FERONIA, ONT.

| | | |
|---|---|---|
| 60905—Clearing Lot No. 7, Con. 1, Widdifield | $25 00 | |
| | | $25 00 |

RAILWAY STEEL SPRING COMPANY, NEW YORK, N.Y.

| | | |
|---|---|---|
| 60993—Tires | $3,360 24 | |
| 61652— " | 2,278 06 | |
| | | $5,638 30 |

MRS. E. RIGBY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61079—Disbursement, account telegrams | $1 32 | |
| | | $1 32 |

RODD & DEACON, COBALT, ONT.

| | | |
|---|---|---|
| 61495—Claim No. 11457—loss account, boots | $4 20 | |
| | | $4 20 |

MRS. F. RICHARDSON, PORQUIS JCT., ONT.

| | | |
|---|---|---|
| 62027—Rental stumper | $9 00 | |
| | | $9 00 |

WM. RIDDLER (CARPENTER), NORTH BAY, ONT.

| | | |
|---|---|---|
| 61150—Award W. C. B., *re* alleged injuries | $16 09 | |
| 62205—Award W. C. B., *re* alleged injuries | 26 12 | |
| | | $42 21 |

JOHN RATHEVICH (LABOURER), NORTH BAY, ONT.

| | | |
|---|---|---|
| 61166—Award W. C. B., *re* alleged injuries | $8 80 | |
| | | $8 80 |

CHAS. RECKIN & SONS, COBALT, ONT.

| | | |
|---|---|---|
| 61412—Claim No. 11471—Alleged loss coffee | $2 50 | |
| 62058— " 12231—Damage and loss, wine jars | 3 77 | |
| 62601— " 12281—Loss, cocoa squares | 3 22 | |
| 62568— " 12230—Loss, cornmeal | 2 00 | |
| | | $11 49 |

ROCK ISLAND SOUTHERN RAILWAY, MANMOUTH, ILL.

| | | |
|---|---|---|
| 61928—Car repairs | $0 46 | |
| | | $0 46 |

MRS. SOPHIA RICHARDS, HEASLIP, ONT.

| | | |
|---|---|---|
| 62331—Settlement *re* alleged injuries | $100 00 | |
| | | $100 00 |

RAND, MCNALLY & COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 62531—Atlas | $15 00 | |
| | | $15 00 |

RELIABLE PRINTING COMPANY, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 62757—Claim No. 12454—Alleged damage to glass | $6 10 | |
| | | $6 10 |

J. FRANK RAW, TORONTO, ONT.

| | | |
|---|---|---|
| 62350—Reglazing picture frames | $2 45 | |
| | | $2 45 |

RITCHIE, LUDWIG & BALLANTYNE, TORONTO, ONT.

| | | |
|---|---|---|
| 62380—Fee *re* suit—A. R. MacDonell vs. T. & N. O. | $100 00 | |
| | | $100 00 |

BERT RICHES (M.P. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 62478—Travelling expenses | $3 85 | |
| | | $3 85 |

JAMES REDPATH, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 62534—Repairing clock, New Liskeard Station | $2 00 | |
| | | $2 00 |

RITCHIE CUT-STONE CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 62662—Stone | $281 00 | |
| | | $281 00 |

ROUTLEY & SUMMERS, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 62730—Building walk, agent's house, Timmins | $10 71 | |
| | | $10 71 |

H. ROBINSON, KENABEEK P.O.

| | | |
|---|---|---|
| 62806—Ties | $67 08 | |
| | | $67 08 |

RAYMOND & WHITCOMB COMPANY, BOSTON, MASS.

| | | |
|---|---|---|
| 63008—Commission on tickets | $1 30 | |
| 63332— " " | 1 48 | |
| 63334— " " | 1 09 | |
| | | $3 87 |

REVILLION FRERES TRADING CO., LIMITED, COCHRANE, ONT.

| | | |
|---|---|---|
| 63238—Claim No. 12585—Alleged damage to canned meat | $1 70 | |
| | | $1 70 |

SCHOOL SECTION No. 3, CLERGUE, FRED. BROWN, SEC.-TREAS., PORQUIS JCT., ONT.

| | | |
|---|---|---|
| 56485—Donation | $50 00 | |
| | | $50 00 |

SEABOARD AIR LINE RAILWAY, PORTSMOUTH, VA.

| | | |
|---|---|---|
| 56543—Car repairs | $6 58 | |
| 57129— " " | 8 48 | |
| 57028— " " | 4 08 | |
| 57320— " " | 1 42 | |
| 58275— " service balance | 4 95 | |
| 59363— " " | 25 65 | |
| 59545— " repairs | 2 23 | |
| 59690— " service balance | 25 65 | |
| 60325— " " | 6 30 | |
| 60584— " " | 3 15 | |
| 61805— " " | 26 10 | |
| 61930— " repairs | 1 57 | |
| 62913— " service balance | 2 20 | |
| 63538— " " | 6 75 | |
| 63784— " repairs | 2 58 | |
| | | $127 69 |

SOUTHERN RAILWAY COMPANY, WASHINGTON, D.C.

| | | |
|---|---|---|
| 56545—Car repairs | $49 66 | |
| 56985— " " | 2 74 | |
| 57264— " " | 11 66 | |
| 58273— " service balance | 90 | |
| 58421— " repairs | 6 53 | |
| 59361— " service balance | 13 50 | |
| 59543— " repairs | 4 20 | |
| 59688— " service balance | 52 15 | |
| 60051— " repairs | 72 | |
| 60323— " service balance | 18 90 | |
| 60582— " " | 22 05 | |
| 61391— " repairs | 10 44 | |
| 61882— " " | 11 05 | |
| 61932— " " | 3 56 | |
| 63786— " " | 6 22 | |
| | | $214 28 |

JOSEPH SEBREAU, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56565—Award W. C. B., *re* injuries alleged received | $21 42 | |
| | | $21 42 |

ANTONIO SCHIARONE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56591—Award W. C. B., *re* injuries alleged received | $23 10 | |
| | | $23 10 |

R. SWAN, SPECIAL OFFICER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56611—Travelling expenses | $37 65 | |
| 56883— " | 33 80 | |
| 56976— " | 32 95 | |
| 57887— " | 32 10 | |
| 57942— " | 32 65 | |
| 58789— " | 35 35 | |
| 59348— " | 31 25 | |
| 60282— " | 38 15 | |
| 61863— " | 41 75 | |
| 61867— " | 33 25 | |
| 61356— " | 37 10 | |
| 62513— " | 41 20 | |
| 63090— " | 40 30 | |
| | | $467 50 |

SOUTHAM PRESS, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56613—Forms | $44 25 | |
| 56755—Hat checks | 20 00 | |
| 57041—Folders, time tables, etc. | 53 00 | |
| 57191—Tickets | 27 50 | |
| 56696—Time tables | 78 00 | |
| 56728—Tariffs | 23 25 | |
| 56730—Tickets | 13 35 | |
| 57152—Tariffs | 93 75 | |
| 57154—Labels | 25 00 | |
| 57761—Tariffs | 31 50 | |
| 57763—Passes | 22 50 | |
| 58123—Tariffs | 45 25 | |
| 57772—Tariffs | 49 75 | |
| 58454—Tickets, passes, checks | 107 35 | |
| 58711—Tickets | 36 20 | |
| 59189—Tariffs | 11 75 | |
| 58916—Loc. freight tariff No. 80 | 11 00 | |
| 59184—Baggage checks, duplex tickets | 260 00 | |
| 60071—Ticket tariffs | 293 40 | |
| 60073—Tariffs F. D. 162 | 54 00 | |
| 59816—Supplement 4 to F. D. 127 | 6 50 | |
| 60384—Tariffs, time tables, etc. | 115 00 | |
| 60390—Time table | 99 00 | |
| 61433—Tariffs F. D. No. 170 | 8 00 | |
| 61298—Circulars | 12 00 | |
| 62302—Tickets | 170 14 | |
| 62537—Checks, cards | 44 76 | |
| 63067—Tickets | 13 22 | |
| 63175—Tariffs, etc. | 46 50 | |
| 62542—Copies embargo notices, etc. | 98 00 | |
| 62734—Copies folders and time tables | 54 75 | |
| 63020—Cards | 33 00 | |
| 63022—Forms, books, tickets | 99 85 | |
| 63340—Forms, etc. | 133 81 | |
| 63666—Circulars No. 108 | 3 75 | |
| | | $2,239 08 |

THE SOCIETY OF RAILWAY FINANCIAL OFFICERS, RIVERSIDE, ILL.

| | | |
|---|---|---|
| 56639—Annual dues, 1915-1916 | $10 00 | |
| 59759—Annual dues, 1916-1917 | 10 00 | |
| | | $20 00 |

SAUNDERS & PETCHERSKY, TIMMINS, ONT.

| | | |
|---|---|---|
| 56671—Claim No. 10293—Damage to flour by wet | $35 49 | |
| | | $35 49 |

SWIFT CANADIAN COMPANY, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56673—Claim No. 10428—Realized on damaged meat | $7 00 | |
| 57385— " 10248—Loss account, shortage, 1 basket bacon | 9 75 | |
| 58834— " 10866—Loss account, shortage, sausage | 2 31 | |
| 62603— " 12216—Loss, meat by deterioration in transit. | 11 98 | |
| | | $31 04 |

SHEET METAL PRODUCTS CO. OF CANADA, LIMITED, TORONTO.

| | | |
|---|---|---|
| 56707—Stove pipes | $7 43 | |
| 56915—Oil cans, shovels, etc. | 26 98 | |
| 56556—Gal. iron | 56 49 | |
| 57006—Pails and iron | 32 10 | |
| 57519—Stove pipes and elbows, sheet metal | 26 57 | |
| 57609—Iron and pails | 31 84 | |
| 57689—Rivets and iron | 74 27 | |
| 57670—Oilers and can screws | 1 44 | |
| 57816—Iron, plates and oil cans | 81 84 | |
| 58583—Pails and plate | 18 85 | |
| 58759—Cups | 4 28 | |
| 59061—Apollo, iron | 42 03 | |
| 58672—Screws, pipes, elbows, etc. | 39 36 | |
| 58718—Wash basins, etc. | 8 87 | |
| 58888—Iron, etc. | 79 07 | |
| 60075—Oil cans, shovels, dampers, etc. | 71 46 | |
| 60653—Measures, funnels | 2 37 | |
| 60326—Canada plate, pails | 61 98 | |
| 61035—Pipes, elbows | 22 49 | |
| 61536—Cups | 8 91 | |
| 62231—Pails, hods | 59 58 | |
| 62379—Iron, elbows | 69 37 | |
| 62431—Plate, cans, etc. | 55 99 | |
| 63198—Iron | 10 54 | |
| | | $894 11 |

THE STEEL COMPANY OF CANADA, LIMITED, HAMILTON, ONT.

| | |
|---|---|
| 56709—Bolts, nuts, screws, etc. | $480 26 |
| 56917—Tacks, etc. | 6 86 |
| 57221—Tacks and iron | 72 44 |
| 57223—Iron and steel plates | 173 43 |
| 57000—Rivets, nuts, bolts, screws | 343 47 |
| 57532—Common iron | 29 40 |
| 57534—Iron and steel | 257 38 |
| 57515—Washers | 20 14 |
| 57517—Rivets, nuts, tacks | 152 80 |
| 57611—Bolts | 58 64 |
| 57691—Washers | 12 14 |
| 57951—Bolts and screws | 213 09 |
| 57971—Bolts, nuts and steel | 138 39 |
| 57666—Nuts, rivets, nails, screws and tacks | 240 96 |
| 57820—Washers | 22 86 |
| 57822—Bolts, screws, nails, washers and tacks | 394 34 |
| 58450—Iron and steel | 37 57 |
| 58452—Iron, steel, bolts, nuts, rivets | 421 52 |
| 58577—Nuts, rivets and tacks | 23 74 |
| 58761—Nuts, rivets and tacks | 463 29 |
| 59067—Iron | 11 85 |
| 59105—Iron, nuts, rivets, spikes | 1,255 43 |
| 58668—Iron, nuts, rivets, bolts | 197 31 |
| 58674—Screws, nuts, rivets, bolts | 257 03 |
| 58720—Screws, bolts | 42 28 |

THE STEEL COMPANY OF CANADA, LIMITED, ETC.—*Continued.*

| | | |
|---|---|---|
| 58722—Rivets | 27 15 | |
| 58770—Spikes, bolts, etc. | 1,169 45 | |
| 58892—Machine bolts | 163 25 | |
| 59188—Steel bolts, nuts, etc. | 2,322 70 | |
| 59214—Iron and steel | 402 71 | |
| 59687—Washers, nuts and bolts | 31 06 | |
| 59689—Rivets, nuts, etc. | 50 63 | |
| 59719—Screws, rivets | 190 24 | |
| 60665—Bars, steel | 24 64 | |
| 60671—Iron | 154 91 | |
| 60152—Nuts, rivets, screws | 1,760 16 | |
| 60156—Washers | 40 03 | |
| 60256—Rivets, nuts, bolts, etc. | 718 59 | |
| 60330—Iron | 8 09 | |
| 60662—Screws, rivets, spikes, etc. | 890 83 | |
| 60806—Iron | 115 72 | |
| 60995—Nuts | 203 72 | |
| 61031—Bolts, screws | 186 90 | |
| 61043—Iron, nuts, washers, etc. | 79 97 | |
| 61981—Steel, iron | 291 90 | |
| 61532—Iron | 14 60 | |
| 61534—Iron | 4 90 | |
| 61658—Steel bars | 12 04 | |
| 61766—Iron | 27 35 | |
| 61798—Bolts, screws and rivets | 1,965 99 | |
| 62435—Bolts, screws, nuts | 528 40 | |
| 62437—Nuts, washers | 56 75 | |
| 63047—Iron | 139 13 | |
| 63049—Bolts, spikes, nuts, etc. | 1,651 32 | |
| 62686—Nuts, iron, steel | 35 23 | |
| 63014—Iron | 53 64 | |
| 63202—Iron and tracks | 13 63 | |
| 63348—Steel | 12 54 | |
| | | $18,674 79 |

T. W. SQUIRE, TORONTO, ONT.

| | | |
|---|---|---|
| 56753—Supplies for private car | $2 62 | |
| 56853— " " " " | 25 88 | |
| 57043— " " " " | 21 78 | |
| 56734— " " " " | 39 39 | |
| 57212— " " " " | 46 72 | |
| 57920— " " " " | 28 86 | |
| 58531— " " " " | 29 49 | |
| 59488— " " " " | 11 72 | |
| 60008— " " " " | 16 53 | |
| 60026— " " " " | 21 53 | |
| 60997— " " " " | 14 90 | |
| 61078— " " " " | 18 53 | |
| 62297— " " " " | 14 95 | |
| | | $292 90 |

J. H. STILL MANUFACTURING CO., LTD., ST. THOMAS, ONT.

| | | |
|---|---|---|
| 56913—Handles | $19 27 | |
| 57528—Flag-staffs | 2 10 | |
| 57513—Handles | 42 79 | |
| 57640— " | 17 23 | |
| 57814— " | 41 07 | |
| 58670—Peavies | 2 47 | |
| 58894—Handles | 16 44 | |
| 59190—Flag-staffs | 3 50 | |
| 59685—Handles | 153 48 | |
| 59989—Handles | 73 15 | |
| 60657—Flag-staffs | 3 50 | |
| 60254—Handles | 35 24 | |
| 62229— " | 23 16 | |
| 62400— " | 63 98 | |
| | | $497 38 |

JAS. SINTON, ENGINEERING DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 56933—Travelling expenses | $9 30 | |
| 58647— " " | 7 20 | |
| 59352— " " | 12 65 | |
| 59835— " " | 18 60 | |
| 60198— " " | 14 00 | |
| 61431— " " | 20 35 | |
| 61260— " " | 5 60 | |
| 62207— " " | 21 50 | |
| 62462— " " | 10 05 | |
| | | $119 25 |

G. M. SIMPSON, LINEMAN, ENGLEHART, ONT.

| | | |
|---|---|---|
| 57077—Travelling expenses | $8 80 | |
| 56980— " " | 8 05 | |
| 57731— " " | 3 65 | |
| 58272— " " | 12 05 | |
| 58612—Disbursement account drill | 75 | |
| 58791—Travelling expenses | 8 80 | |
| 59647— " " | 21 60 | |
| | | $63 70 |

N. J. SULLIVAN, LINEMAN, ELK LAKE, ONT.

| | | |
|---|---|---|
| 57079—Travelling expenses | $18 50 | |
| 56978— " " | 1 40 | |
| 58793— " " | 31 40 | |
| 59350— " " | 3 35 | |
| 59957— " " | 12 85 | |
| 60284— " " | 2 50 | |
| 61545— " " | 12 95 | |
| 61406— " " | 26 00 | |
| 62631— " " | 2 25 | |
| 62788— " " | 24 35 | |
| | | $135 55 |

J. STOCKDALE, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57297—Lot No. 73, North Bay Junction | $1,500 00 | |
| | | $1,500 00 |

STANDARD PLANING MILLS, LIMITED, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57307—Picture moulding | $2 62 | |
| 56812—Wood, building material, etc. | 123 67 | |
| 58125—Lumber, sash, doors and frames | 45 05 | |
| 58515— " | 513 63 | |
| 60651— " | 408 99 | |
| 60328—Lath | 42 00 | |
| 61983—Lumber, doors | 671 12 | |
| 61540—Wicket and grill, casings | 35 00 | |
| 62304—Lumber | 123 27 | |
| 62425—Frames, lumber, etc. | 330 60 | |
| 62539—Flooring, moulding, etc. | 17 19 | |
| 63018—Lumber | 394 75 | |
| 63344—Lumber | 59 65 | |
| | | $2,767 54 |

W. J. STEVENSON, THORNLOE, ONT.

| | | |
|---|---|---|
| 57309—Slabs | $84 00 | |
| 60386—Slabs | 120 00 | |
| 61039—Lumber | 120 00 | |
| 61654—Slabs | 168 00 | |
| | | $492 00 |

SMITH'S FALLS MALLEABLE CASTINGS CO., LIMITED, SMITH'S FALLS, ONT.

| | | |
|---|---|---|
| 57311—Castings | $1 58 | |
| 57977— " | 25 54 | |
| 59063— " | 25 42 | |
| 60818—Express on patterns | 70 | |
| 61538—Freight on patterns | 40 | |
| 61772—Castings | 22 19 | |
| 63045— " | 3 99 | |
| 62664— " | 51 01 | |
| 63336— " | 10 35 | |
| | | $141 18 |

WILLIAM SCULLY, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57313—Uniform caps | $4 50 | |
| 58464— " " | 2 25 | |
| 59192— " " | 76 25 | |
| 60812— " buttons | 2 10 | |
| 63089— " buttons | 70 10 | |
| 63132— " caps | 60 75 | |
| | | $215 95 |

THE SAFETY CAR HEATING & LIGHTING CO., NEW YORK, N.Y.

| | | |
|---|---|---|
| 57315—Lighting equipment | $1,468 00 | |
| 57530—Fittings | 58 61 | |
| 57973—Fittings and mantles | 146 10 | |
| 58456—Mantles and opal bowls | 84 30 | |
| 60667—Brush, fasteners, etc. | 218 85 | |
| 60822—Fuses, fuse holders | 6 10 | |
| 61337—Mantles, etc. | 117 00 | |
| 61979—Lamps, brackets | 507 37 | |
| 62433—Lighting equipment | 1,290 00 | |
| 63012—Keys, pulley, cover, etc. | 126 56 | |
| 63318—Screws, lead, washers, etc. | 22 26 | |
| | | $4,045 15 |

SCYTHES & COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57317—Waste | $315 42 | |
| 56586—Duck | 77 66 | |
| 57002—Duck | 57 49 | |
| 57524—Waste | 194 98 | |
| 57975—Waste | 390 56 | |
| 58579—Duck | 161 88 | |
| 59057—Waste | 759 21 | |
| 58890—Duck | 77 42 | |
| 59180—Waste | 437 19 | |
| 60824— " | 712 35 | |
| 61770— " | 995 53 | |
| 63049— " | 232 85 | |
| 62666— " | 586 80 | |
| 63010— " | 223 64 | |
| 63200—Duck | 83 97 | |
| | | $5,306 95 |

J. STONE & COMPANY, LIMITED, DEPTFORD, LONDON, S.E., ENGLAND.

| | |
|---|---|
| 57437—Belting, etc. | $195 22 |
| 56810—Belting, etc. | 83 24 |
| 58466—Dynamos and electrical goods | 1,588 93 |
| 58650—Tonum accumulators, etc. | 1,482 81 |
| 59182—Resistance covers, springs | 7 17 |
| 60669—Ebonite sheets, floats, etc. | 92 82 |
| 60388—Ammeter repaired | 6 85 |

J. Stone & Company, Limited, Etc.—*Continued.*

| | | |
|---|---|---|
| 60816—Electrical supplies | 219 43 | |
| 60920—Switchboard | 23 54 | |
| 61033—Belting, side sheets | 122 82 | |
| 61985—Repairing armature | 30 15 | |
| 62784—Belt fasteners, etc. | 152 12 | |
| 63016—Electrical fixtures | 30 57 | |
| 63338—Belt fasteners, etc. | 40 86 | |
| | | $4,076 53 |

T. M. Stephenson, Toronto.

| | | |
|---|---|---|
| 56698—Canadian Almanac | $1 00 | |
| | | $1 00 |

Stoddart Bros., North Bay, Ont.

| | | |
|---|---|---|
| 56732—Supplies furnished private car | $17 93 | |
| 57765—Supplies furnished private car | 16 54 | |
| | | $34 47 |

St. Louis & San Francisco Railroad Co., St. Louis, Mo.

| | | |
|---|---|---|
| 56922—Car service balance | $5 30 | |
| 57318— " repairs | 2 36 | |
| 58269— " service balance | 12 10 | |
| 58423— " repairs | 2 21 | |
| 58214— " service balance | 12 60 | |
| 59359— " service balance | 27 00 | |
| 59539— " repairs | 1 96 | |
| 59362— " repairs | 10 84 | |
| 59686— " service balance | 28 80 | |
| 60095— " repairs | 71 | |
| 60321— " service balance | 35 50 | |
| 60580— " " " | 27 45 | |
| 61803— " " " | 6 45 | |
| 61114— " repairs | 1 22 | |
| 61884— " repairs | 1 14 | |
| 62911— " service balance | 10 70 | |
| 63536— " service balance | 6 15 | |
| | | $192 49 |

Southern Pacific Company, Pacific System, San Francisco, Cal.

| | | |
|---|---|---|
| 56924—Car service balance | $13 50 | |
| 57322— " repairs | 1 88 | |
| 58271— " service balance | 24 30 | |
| 58216— " " " | 29 25 | |
| 59365— " " " | 34 60 | |
| 59364— " repairs | 52 | |
| 59692— " service balance | 40 50 | |
| 60327— " " " | 37 35 | |
| 60586— " " " | 24 75 | |
| 61807— " " " | 49 10 | |
| 61880— " repairs | 2 31 | |
| 62200— " service balance | 9 45 | |
| 62915— " " " | 4 05 | |
| 63540— " " " | 27 90 | |
| | | $299 46 |

St. Louis, Brownsville & Mexico Railway Company, Kingsville, Tex.

| | |
|---|---|
| 56926—Car service balance | $8 10 |
| 58279— " | 11 25 |
| 58220— " | 6 75 |
| 59369— " | 9 00 |
| 59696— " | 2 70 |

ST. LOUIS, BROWNSVILLE & MEXICO RAILWAY COMPANY, ETC.—*Continued.*

| | | |
|---|---|---|
| 60331—Car service balance | $9 45 | |
| 60333— " | 3 60 | |
| 61811— " | 45 | |
| | | $51 30 |

SANTA FE REFRIGERATOR DESPATCH COMPANY, TOPEKA, KAN.

| | | |
|---|---|---|
| 56928—Car service balance | $1 90 | |
| 58281— " | 1 90 | |
| 59698— " | 2 30 | |
| 60335— " | 21 63 | |
| 60588— " | 20 71 | |
| 61813— " | 3 79 | |
| 62917— " | 17 52 | |
| 63544— " | 10 20 | |
| | | $79 95 |

THE JAMES SMART MFG. CO., BROCKVILLE, LIMITED, BROCKVILLE, ONT.

| | | |
|---|---|---|
| 57004—Hammers | $3 43 | |
| 57521—Cylinders | 36 69 | |
| 57818—Pressure plate | 5 39 | |
| 58581—Tools | 14 44 | |
| 58766—Hammers | 15 22 | |
| 59683—Lawn mower | 4 36 | |
| 59991—Hasps, staples, etc. | 14 09 | |
| 61542—Wrenches | 48 30 | |
| 61768—Copying presses, fulcrums, etc. | 73 35 | |
| 62429—Hammers | 3 67 | |
| 62402—Hinges, gate hooks, etc. | 8 47 | |
| | | $227 41 |

SHURLY-DIETRICH COMPANY, LIMITED, GALT, ONT.

| | | |
|---|---|---|
| 57008—Saws | $6 85 | |
| 57668— " | 8 08 | |
| 58714— " | 32 34 | |
| 58768— " | 3 80 | |
| 59128— " | 16 50 | |
| 60661— " handles | 17 50 | |
| 60808— " | 8 48 | |
| 61257— " | 9 10 | |
| 63051— " | 33 84 | |
| | | $136 49 |

STATION LIST PUBLISHING COMPANY, ST. LOUIS, MO.

| | | |
|---|---|---|
| 57144—Supplements to station lists | $1 19 | |
| 57759—Station lists | 3 20 | |
| 58610—Supplements to station lists | 1 31 | |
| | | $5 70 |

THE STRATFORD DAILY HERALD, STRATFORD, ONT.

| | | |
|---|---|---|
| 57148—Advertising | $0 50 | |
| 57723— " | 1 00 | |
| 58576— " | 50 | |
| 60749— " | 3 00 | |
| 61259— " | 1 10 | |
| 62298— " | 1 09 | |
| 63668— " | 1 12 | |
| | | $8 31 |

THE SPECTATOR PRINTING CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 57150—Advertising | $20 00 | |
| 60028— " | 2 46 | |
| 61132— " | 2 52 | |
| 62540— " | 2 52 | |
| | | $27 50 |

SOUTHERN CLASSIFICATION COMMITTEE, ATLANTA, GA.

| | | |
|---|---|---|
| 57156—Supplements to tariffs | $0 66 | |
| 59605— " " | 54 | |
| 60397— " " | 23 | |
| 62301—Tariffs | 42 | |
| | | $1 85 |

SWEDISH STEEL & IMPORTING CO., LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 57526—Steel | $8 32 | |
| 57987— " | 3 88 | |
| 59071— " | 48 28 | |
| 60659— " | 56 83 | |
| 63130— " | 2 55 | |
| | | $119 86 |

SUNBEAM SPECIALTY COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57511—Lanterns | $12 74 | |
| 58716— " | 12 74 | |
| 58886— " | 25 48 | |
| | | $50 96 |

STRATFORD DAILY & WEEKLY BEACON, STRATFORD, ONT.

| | | |
|---|---|---|
| 57725—Advertising | $1 15 | |
| 58713— " | 70 | |
| 59779— " | 1 29 | |
| 60030— " | 1 05 | |
| 61130— " | 1 50 | |
| 62532— " | 1 23 | |
| | | $6 83 |

SLAGHT & SLAGHT, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 57755—Donation to H. Robinson *re* cow alleged struck | $50 00 | |
| | | $50 00 |

SAMSON CORDAGE WORKS, BOSTON, MASS.

| | | |
|---|---|---|
| 57969—Signal cords | $21 05 | |
| 60810—Signal cords | 96 00 | |
| | | $117 05 |

JOHN B. SMITH & SONS, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57979—Lumber | $356 40 | |
| 63043—Lumber | 38 85 | |
| | | $395 25 |

SHEA, SMITH & CO., CHICAGO, ILL.

| | | |
|---|---|---|
| 57981—Books | $45 00 | |
| 58458—Memo tablets | 3 87 | |
| 59059—Binding cases | 30 75 | |
| 60655—Fillers | 2 07 | |
| 61660—Waybill tissue | 33 49 | |
| | | $115 18 |

THE STEEL EQUIPMENT COMPANY, LIMITED, PEMBROKE, ONT.

| | | |
|---|---|---|
| 57983—Binding cases | $24 00 | |
| 60663—Binding cases | 12 00 | |
| 61339—Transfer cases | 25 50 | |
| 61656—Files, binding cases | 24 00 | |
| | | $85 50 |

SUPERINTENDENT OF DOCUMENTS, WASHINGTON, D.C.

| | | |
|---|---|---|
| 57985—Report on deep waters | $3 50 | |
| | | $3 50 |

SCHUMACHER GOLD MINES, LIMITED, SCHUMACHER, ONT.

| | | |
|---|---|---|
| 58077—Claim No. 10391—Loss account, damage furnace | $30 00 | |
| 60873—Claim No. 10176—Loss account, damage to machinery | 12 85 | |
| | | $42 85 |

SAN ANTONIO & ARANSAS PASS RAILWAY COMPANY, SAN ANTONIO, TEX.

| | | |
|---|---|---|
| 58277—Car service balance | $4 50 | |
| 58218— " " | 9 45 | |
| 63542— " " | 4 50 | |
| | | $18 45 |

SANDY VALLEY & ELKHORN RAILWAY, BALTIMORE, MD.

| | | |
|---|---|---|
| 58283—Car service balance | $4 50 | |
| 58222— " " | 13 05 | |
| 59371— " " | 13 05 | |
| 59700— " " | 12 15 | |
| 60337— " " | 6 75 | |
| 60590— " " | 90 | |
| 61815— " " | 10 35 | |
| 62204— " " | 45 | |
| | | $61 20 |

SAN ANTONIO, UALDE & GULF RAILROAD COMPANY, ST. LOUIS, MO.

| | | |
|---|---|---|
| 58419—Car repairs | $0 98 | |
| | | $0 98 |

SAMUEL STAYMAN, ENGLEHART P.O.

| | | |
|---|---|---|
| 58463—Ties | $275 85 | |
| | | $275 85 |

RICHARD SOMERVILLE, NORTH BAY P.O.

| | | |
|---|---|---|
| 58463—Ties | $81 54 | |
| | | $81 54 |

CHAS. P. SCOTT, NELLIE LAKE P.O., ONT.

| | | |
|---|---|---|
| 57674—1.24 acres of land | $60 00 | |
| | | $60 00 |

MRS. AMBROSE SMALL, 208TH IRISH FUSILIERS BATTALION, TORONTO.

| | | |
|---|---|---|
| 57682—Advertising in programme | $25 00 | |
| | | $25 00 |

M. SILVERSTONE, COCHRANE, ONT.

| | | |
|---|---|---|
| 58026—Claim No. 10572—Loss account, damage to shoes | $48 97 | |
| | | $48 97 |

SAN PEDRO, LOS ANGELES & SALT LAKE RAILROAD COMPANY, LOS ANGELES, CAL.

| | | |
|---|---|---|
| 58224—Car service balance | $0 90 | |
| 59373—Car service balance | 1 80 | |
| 59744—Ticket balance | 82 | |
| 60060—Car repairs | 34 | |
| 62919— " service balance | 7 20 | |
| 63546— " " | 90 | |
| | | $11 96 |

SWIFT REFRIGERATOR TRANSPORTATION COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 58226—Car service balance | $2 56 | |
| 59375— " " | 3 83 | |
| 59702— " " | 10 60 | |
| 60339— " " | 4 90 | |
| 59854— " repairs | 12 | |
| 60592— " service balance | 1 93 | |
| 61817— " " | 5 80 | |
| 62921— " " | 3 87 | |
| | | $33 61 |

W. C. STAHLE COMPANY, PITTSBURG, PA.

| | | |
|---|---|---|
| 58460—Computing tables | $5 17 | |
| 59196—Computing tables | 5 17 | |
| | | $10 34 |

STOWELL MANUFACTURING & FOUNDRY COMPANY, SOUTH MILWAUKEE, WIS.

| | | |
|---|---|---|
| 58462—Door hangers | $15 00 | |
| | | $15 00 |

EDWARD SOWRY, CANE P.O.

| | | |
|---|---|---|
| 58593—Ties | $89 60 | |
| 59754—Ties | 49 90 | |
| | | $139 50 |

SKINNER CHUCK COMPANY, NEW BRITAIN, CONN.

| | | |
|---|---|---|
| 58625—Universal chuck and face plate | $49 20 | |
| | | $49 20 |

MESSRS. SULLIVAN & SHILLINGTON, COBALT, ONT.

| | | |
|---|---|---|
| 58899—Claim No. 10672—Overcharge, weight apples | $12 38 | |
| | | $12 38 |

SMITH, FASSETT & COMPANY, CHARLTON, ONT.

| | | |
|---|---|---|
| 58985—Claim No. 10985—Refund, demurrage charges | $1 00 | |
| | | $1 00 |

STANDARD CHEMICAL IRON & LUMBER COMPANY OF CANADA, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59065—Shellac spirits | $39 20 | |
| 63346— " and barrel | 39 97 | |
| | | $79 17 |

THE STEVENSON BOILER & ENGINE WORKS, PETROLIA, ONT.

| | | |
|---|---|---|
| 59069—Chemical bottles | $12 00 | |
| 63061—Cages and stoppers | 10 20 | |
| | | $22 20 |

ST. JOSEPH & GRAND ISLAND RAILROAD COMPANY, ST. JOSEPH, MO.

| | | |
|---|---|---|
| 59367—Car service balance | $5 85 | |
| 59694— " " | 90 | |
| 60329— " " | 3 60 | |
| 61809— " " | 2 70 | |
| 62202— " " | 5 85 | |
| | | $18 90 |

ST. LOUIS SOUTHWESTERN RAILWAY COMPANY OF TEXAS, TYLER, TEXAS.

| | | |
|---|---|---|
| 59541—Car repairs | $1 54 | |
| 59316— " " | 2 19 | |
| | | $3 73 |

STANDARD STEEL WORKS COMPANY, PHILADELPHIA, PA.

| | | |
|---|---|---|
| 58652—Tires | $556 47 | |
| | | $556 47 |

STEEL & RADIATION, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58896—Grates | $5 85 | |
| 62427—Steel sash | 1,269 15 | |
| | | $1,275 00 |

THE SMART-TURNER MACHINE COMPANY, LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 59194—Cylinder levers for duplex pump | $42 00 | |
| 60719—Pump parts | 72 66 | |
| | | $114 66 |

SENECA COAL MINING COMPANY, BUFFALO, N.Y.

| | | |
|---|---|---|
| 59382—Coal | $1,742 89 | |
| 60858— " | 41 55 | |
| | | $1,784 44 |

A. SHAHEN, GOWGANDA, ONT.

| | | |
|---|---|---|
| 59416—Claim No. 10897—loss box junk destroyed by fire | $23 10 | |
| | | $23 10 |

GEORGE SASSEVILLE, WIDDIFIELD, ONT.

| | | |
|---|---|---|
| 59420—Claim No. 10873—loss account, cowhide destroyed by fire | $8 80 | |
| | | $8 80 |

R. H. SLIPP, TROCHU, ALTA.

| | | |
|---|---|---|
| 59512—Claim No. 11269—loss account, baggage destroyed by fire. | $100 00 | |
| | | $100 00 |

SPOKANE, PORTLAND & SEATTLE RAILWAY COMPANY, PORTLAND, ORE.

| | | |
|---|---|---|
| 59742—Ticket balance | $0 87 | |
| | | $0 87 |

A. SKJONSBYE, SESEKINIKA P.O.

| | | |
|---|---|---|
| 59754—Ties | $109 41 | |
| | | $109 41 |

THOS. M. SALE, STORES DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 59769—Travelling expenses | $14 30 | |
| 60200— " " | 25 40 | |
| 61081— " " | 21 00 | |
| | | $60 70 |

ST. LOUIS SOUTHWESTERN RAILWAY COMPANY, ST. LOUIS, MO.

| | | |
|---|---|---|
| 59923—Car repairs | $0 31 | |
| | | $0 31 |

A. W. Skinner, Englehart, Ont.

| | | |
|---|---|---|
| 60097—Load straw and bags | $2 65 | |
| | | $2 65 |

Arthur Stevens, Englehart, Ont.

| | | |
|---|---|---|
| 60395—Lunches to passengers, Train No. 1 | $3 50 | |
| 63203—Claim No. 11807—alleged loss three gals. orangeade | 8 38 | |
| 62572— " No. 11911—loss cigarettes | 52 | |
| | | $12 40 |

Sudbury Star Publishers, Limited, Sudbury, Ont.

| | | |
|---|---|---|
| 60435—Advertising | $4 05 | |
| | | $4 05 |

Stephenson & Son, "New Liskeard Speaker," New Liskeard, Ont.

| | | |
|---|---|---|
| 60747—Advertising | $4 00 | |
| 61255— " | 4 70 | |
| 61134— " | 4 80 | |
| 62732— " | 25 80 | |
| | | $39 30 |

Mark Spence, Winnipeg, Man.

| | | |
|---|---|---|
| 59838—Claim No. 11588—loss account, baggage destroyed by fire | $100 00 | |
| | | $100 00 |

Henry Smith, Porquis Junction, Ont.

| | | |
|---|---|---|
| 60064—Ties | $31 14 | |
| | | $31 14 |

G. G. Smith, Earlton, Ont.

| | | |
|---|---|---|
| 60064—Ties | $117 72 | |
| | | $117 72 |

Star Grocery, North Bay, Ont.

| | | |
|---|---|---|
| 60076—Supplies, private car | $23 19 | |
| | | $23 19 |

Safety Press, New York, N.Y.

| | | |
|---|---|---|
| 60814—Safety standards | $3 16 | |
| | | $3 16 |

Steele, Briggs Seed Company, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 60820—Supplies | $4 50 | |
| 60922—Seeds | 30 35 | |
| | | $34 85 |

Ernest Strand, Bourkes, Ont.

| | | |
|---|---|---|
| 60795—Award, W. C. B., alleged accident | $550 00 | |
| | | $550 00 |

Mike Seruak, Gillies Depot, Ont.

| | | |
|---|---|---|
| 60823—Award, W. C. B., partial payment *re* alleged injuries | $19 29 | |
| 61083— " " " " | 7 50 | |
| | | $26 79 |

JOSEPH STARK, NORTH BAY, ONT.

| | | |
|---|---|---|
| 60833—Award, W. C. B., partial payment *re* alleged injuries.... | $18 26 | |
| 60971— " " " " .... | 18 26 | |
| 61052— " " " " .... | 16 74 | |
| 62786— " final " " .... | 200 00 | |
| | | $253 26 |

P. SEDUCKO, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61085—Unclaimed wages ..... | $4 60 | |
| | | $4 60 |

O. SCHAFFER, ST. PAUL, MINN.

| | | |
|---|---|---|
| 61087—Tariffs ..... | $1 00 | |
| 62299— " ..... | 1 00 | |
| | | $2 00 |

STRONG DRUG COMPANY, LIMITED, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 61181—Claim No. 11573—loss account, wine in transit ..... | $0 71 | |
| 63186—Claims Nos. 12979 and 12978—loss bottle wine broken in transit ..... | 1 42 | |
| | | $2 13 |

ANGUS SINCLAIR, C.E., TORONTO, ONT.

| | | |
|---|---|---|
| 61341—Harness ..... | $25 00 | |
| 63065—Carts ..... | 36 00 | |
| | | $61 00 |

MRS. C. R. SELLAR, COBALT, ONT.

| | | |
|---|---|---|
| 61497—Claim No. 10912—loss account, damage to tea ..... | $1 90 | |
| | | $1 90 |

W. SWITZER (RELIEVING SUPERVISOR), NORTH BAY, ONT.

| | | |
|---|---|---|
| 61547—Travelling expenses ..... | $11 45 | |
| 61262— " " ..... | 6 10 | |
| 62341— " " ..... | 5 15 | |
| | | $22 70 |

M. SITEMAN, COBALT, ONT.

| | | |
|---|---|---|
| 61639—Claim No. 11472—loss gallon lemonade ..... | $2 00 | |
| | | $2 00 |

MRS. J. H. SUMBLER, COBALT, ONT.

| | | |
|---|---|---|
| 61641—Claim No. 12027—damage to umbrellas ..... | $0 50 | |
| | | $0 50 |

CHAS. R. SCOTT, ENGINEERING DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 61170—Travelling expenses ..... | $6 90 | |
| | | $6 90 |

STENSON BROS., SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 61824—Claim No. 12171—alleged loss, Scott's Emulsion..... | $1 80 | |
| 63694— " No. 12172—loss account, damage to barrel drugs .. | 34 46 | |
| | | $36 26 |

W. J. Stothers, Porquis Junction, Ont.

| | | |
|---|---|---|
| 62541—Groceries, butter | $14 30 | |
| | | $14 30 |

Albert Smith Printing Company, Toronto, Ont.

| | | |
|---|---|---|
| 62571—Statements, forms | $29 50 | |
| | | $29 50 |

J. A. Simmers, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 63063—Glass catcher | $4 75 | |
| | | $4 75 |

Thomas Steel, North Bay, Ont.

| | | |
|---|---|---|
| 62404—Award, W. C. B., *re* alleged injuries | $20 14 | |
| | | $20 14 |

Shankman Bros., Timmins, Ont.

| | | |
|---|---|---|
| 62912—Claim No. 12037—alleged loss two bottles syrup | $0 60 | |
| | | $0 60 |

Standard Sanitary Manufacturing Company, Limited, Toronto, Ont.

| | | |
|---|---|---|
| 63342—Sinks and traps | $55 46 | |
| | | $55 46 |

Miss E. Fittensor, Stenographer, Cobalt, Ont.

| | | |
|---|---|---|
| 56469—Salary, November, 1915 | $65 00 | |
| 56504— " December, 1915 | 65 00 | |
| 57453— " January, 1916 | 65 00 | |
| 57582— " February, 1916 | 65 00 | |
| 58473— " March, 1916 | 65 00 | |
| 58630— " April, 1916 | 65 00 | |
| 59619— " May, 1916 | 65 00 | |
| 59786— " June, 1916 | 65 00 | |
| 60803— " July, 1916 | 65 00 | |
| 61040— " August, 1916 | 65 00 | |
| 62131— " September, 1916 | 65 00 | |
| 62342— " October, 1916 | 18 87 | |
| | | $733 87 |

Miss E. Tittensor, Stenographer, Cobalt, Ont.

| | | |
|---|---|---|
| 56479—Fee as Counsel, November, 1915 | $400 00 | |
| 56514— " " December, 1915 | 400 00 | |
| 57463— " " January, 1916 | 400 00 | |
| 57592— " " February, 1916 | 400 00 | |
| 58483— " " March, 1916 | 400 00 | |
| 58640— " " April, 1916 | 400 00 | |
| 59627— " " May, 1916 | 400 00 | |
| 59798— " " June, 1916 | 400 00 | |
| 60815— " " July, 1916 | 400 00 | |
| 61036— " " August, 1916 | 400 00 | |
| 62127— " " September, 1916 | 400 00 | |
| 62338— " " October, 1916 | 400 00 | |
| | | $4,800 00 |

Toronto, Hamilton & Buffalo Railway Company, Detroit, Mich.

| | |
|---|---|
| 56547—Car repairs | $8 55 |
| 56954—Ticket balance | 10 95 |
| 57328—Car repairs | 1 85 |
| 58333—Ticket balance | 4 48 |

TORONTO, HAMILTON & BUFFALO RAILWAY COMPANY, ETC.—*Continued.*

| | | |
|---|---|---|
| 59421—Ticket balance | 6 58 | |
| 59549—Car repairs | 1 60 | |
| 59746—Ticket balance | 3 30 | |
| 60053—Car repairs | 2 08 | |
| 60387—Ticket balance | 3 44 | |
| 60632— " " | 2 20 | |
| 61847— " " | 2 20 | |
| 61888—Car repairs | 3 01 | |
| 62963—Ticket balance | 3 51 | |
| 63578— " " | 3 85 | |
| 63788—Car repairs | 11 09 | |
| | | $68 69 |

THE TOLEDO & OHIO CENTRAL RAILWAY COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 56549—Car repairs | $2 05 | |
| 57324— " " | 42 | |
| 59547— " " | 42 | |
| 58958—Car service balance | 7 20 | |
| | | $10 09 |

TOWN OF COBALT, COBALT, ONT.

| | | |
|---|---|---|
| 56583—Grant towards general purposes of town | $1,200 00 | |
| | | $1,200 00 |

THE TREASURER OF ONTARIO, TORONTO, ONT.

| | | |
|---|---|---|
| 56589—Account fire ranging | $7,909 50 | |
| 57643— " fire ranging | 5,000 00 | |
| 58129— " land required for piling ground purposes | 2 00 | |
| 58509— " fire ranging | 1,464 50 | |
| 58676— " " " | 5,000 00 | |
| 60099— " " " | 5,000 00 | |
| 61172— " " " | 5,000 00 | |
| 62438—Proceeds from operation | 1,000,000 00 | |
| | | $1,029,376 00 |

TOUGH-OAKES GOLD MINES, LIMITED, SWASTIKA, ONT.

| | | |
|---|---|---|
| 56675—Claim No. 10088, carboy acid broken in transit | $6 02 | |
| 58715—Coal | 340 75 | |
| 61185—Claim No. 11813, damage to slate | 12 50 | |
| | | $359 27 |

THE TORONTO ELECTRIC LIGHT COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 56757—Current supplied | $5 06 | |
| 56704— " " | 7 86 | |
| 58345— " " | 7 82 | |
| 57854— " " | 4 82 | |
| 59107— " " | 3 29 | |
| 59084— " " | 3 02 | |
| 59867— " " | 2 20 | |
| 60170— " " | 1 96 | |
| 61089— " " | 1 92 | |
| 61152— " " | 3 02 | |
| 62694— " " | 2 60 | |
| | | $43 57 |

TIME-TABLE DISTRIBUTING CO. OF CANADA, ST. JOHN, N.B.

| | | |
|---|---|---|
| 56759—Distributing time-tables | $15 00 | |
| 57767— " " | 15 00 | |
| 57950— " " | 15 00 | |
| 58920— " " | 15 00 | |

TIME-TABLE DISTRIBUTING CO. OF CANADA, ETC.—*Continued.*

| | | |
|---|---|---|
| 59078—Distributing time-tables | $31 27 | |
| 60013— " " | 15 00 | |
| 60010— " " | 15 00 | |
| 61153— " " | 15 00 | |
| 62308— " " | 15 00 | |
| 62493— " " | 15 00 | |
| 62738— " " | 15 00 | |
| | | $181 27 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY AGENT, ENGLEHART, ONT.

| | | |
|---|---|---|
| 56761—Clearance of outstanding | $0 50 | |
| 57112—Claim No. 9822, outstanding | 35 | |
| 57769—Expenses *re* lecture on explosives | 31 75 | |
| 59398—Claim No. 10683, outstanding | 35 | |
| 62307—Board and lodging, freight shed employees | 15 45 | |
| | | $48 40 |

TEMISKAMING TELEPHONE CO., LIMITED, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 56785—Telephone rental | $28 50 | |
| 56702—Telephone rental | 5 00 | |
| 57991—Wire | 66 28 | |
| 58453—Telephone rentals | 28 50 | |
| 57776— " " | 35 00 | |
| 59607— " " | 17 50 | |
| 58922— " " | 22 50 | |
| 59761— " " | 25 00 | |
| 60401— " " | 39 00 | |
| 60907— " " | 28 50 | |
| 60909— " " | 35 00 | |
| 61174— " " | 15 00 | |
| 61386— " " | 17 50 | |
| 63024— " " | 15 00 | |
| 63138— " " | 28 50 | |
| 63168— " " | 22 50 | |
| | | $429 28 |

TUDHOPE LUMBER COMPANY, ELK LAKE, ONT.

| | | |
|---|---|---|
| 56787—Wood supplied agent | $7 50 | |
| 57321—Lumber | 205 96 | |
| 57010— " | 429 84 | |
| 58627— " | 429 98 | |
| 61610— " | 80 64 | |
| 63370—Ties | 179 18 | |
| | | $1,333 10 |

P. TAUPIN, LINEMAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61549—Expenses, travelling | $1 35 | |
| | | $1 35 |

TRANS-CONTINENTAL FREIGHT BUREAU, CHICAGO, ILL.

| | | |
|---|---|---|
| 56855—Tariffs supplied | $1 83 | |
| 57158— " " | 2 18 | |
| 57778— " " | 1 08 | |
| 58580— " " | 3 49 | |
| 58950— " " | 1 66 | |
| 59943— " " | 1 27 | |
| 60399— " " | 1 52 | |
| 59818— " " | 3 02 | |
| 61093— " " | 4 34 | |
| 62303— " " | 3 20 | |
| 62740—Supplements supplied | 3 19 | |
| | | $26 78 |

TEMISKAMING & NORTHERN ONTARIO RY. TELEGRAPH, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56857—Telegraph service | $1 77 | |
| 57160— " " | 88 | |
| 57216— " " | 3 37 | |
| 57780— " " | 1 50 | |
| 57944— " " | 3 02 | |
| 58582— " " | 2 97 | |
| 58767— " " | 2 96 | |
| 59463— " " | 32 | |
| 59609— " " | 72 | |
| 59490— " " | 21 | |
| 59778— " " | 5 26 | |
| 60670— " " | 2 64 | |
| 61008— " " | 3 79 | |
| 62029— " " | 33 | |
| 61462— " " | 33 | |
| 62310— " " | 48 | |
| 62546— " " | 28 | |
| 63350— " " | 35 | |
| | | $31 18 |

TOWN OF ENGLEHART, ENGLEHART, ONT.

| | | |
|---|---|---|
| 56927—Donation towards installation of sewage and waterworks plant | $1,318 54 | |
| | | $1,318 54 |

TORONTO SANITARY TOWEL SUPPLY CO., TORONTO, ONT.

| | | |
|---|---|---|
| 57045—Rent of towel supply | $1 00 | |
| 56706— " " " " | 1 00 | |
| 57948— " " " " | 1 00 | |
| 59320— " " " " | 3 00 | |
| 60015— " " " " | 1 00 | |
| 60260— " " " " | 1 00 | |
| 61091— " " " " | 1 00 | |
| 61300— " " " " | 1 00 | |
| 62439— " " " " | 2 65 | |
| 62742— " " " " | 4 80 | |
| | | $17 45 |

TEMISKAMING & NORTHERN ONTARIO RY. AGENT, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 57047—Supplies for private car | $1 43 | |
| 61216—Disbursements *re* bush fires | 68 40 | |
| 57864—Transportation issued account alleged fatal injuries, brakeman | 40 65 | |
| | | $110 48 |

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS, ST. LOUIS, MO.

| | | |
|---|---|---|
| 57131—Car repairs | $1 40 | |
| 58425— " " | 1 29 | |
| 59366— " " | 4 11 | |
| 59704— " service balance | 2 70 | |
| 60437— " repairs | 2 68 | |
| 61317— " " | 4 11 | |
| 61886— " " | 5 09 | |
| 63640— " " | 2 37 | |
| | | $23 75 |

J. J. TAYLOR, LIMITED, TORONTO.

| | | |
|---|---|---|
| 57319—Repairing key | $0 50 | |
| 63071—Safe | 185 00 | |
| | | $185 50 |

JAS. R. TODD, SCHUMACHER, ONT.

| | | |
|---|---|---|
| 57387—Claim No. 10442, loss turps. account damage to container.. | $4 80 | |
| | | $4 80 |

TRAFFIC SERVICE BUREAU, CHICAGO, ILL.

| | | |
|---|---|---|
| 61561—Subscription ..... | $10 00 | |
| | | $10 00 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, DIVER, ONT.

| | | |
|---|---|---|
| 57391—Claim No. 8646—Outstanding account, shipment short .. | $3 50 | |
| | | $3 50 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, HEASLIP, ONT.

| | | |
|---|---|---|
| 57395—Claim No. 10476—Outstanding account, shortage, barrel apples ..... | $0 84 | |
| | | $0 84 |

CORPORATION OF THE TOWN OF NORTH BAY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56607—Water supplied ..... | $12 75 | |
| 57435— " ..... | 211 75 | |
| 57574— " ..... | 305 83 | |
| 57717— " ..... | 12 75 | |
| 58445— " ..... | 268 10 | |
| 58608— " ..... | 284 48 | |
| 59183— " ..... | 345 87 | |
| 58740— " ..... | 12 75 | |
| 59484— " ..... | 248 64 | |
| 60745— " ..... | 331 66 | |
| 60958— " ..... | 281 75 | |
| 62023— " ..... | 221 48 | |
| 61126— " ..... | 12 75 | |
| 62294— " ..... | 346 36 | |
| 63167— " ..... | 204 82 | |
| 63330— " ..... | 269 57 | |
| | | $3,371 31 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY (OPERATION), TORONTO, ONT.

| | |
|---|---|
| 57439—Potatoes ..... | $35 00 |
| 57026—Claim No. 9344—Undercharge, weight woodpulp ..... | 32 |
| 57066—Claim No. 10251—Undercharge, weight on gold ore ..... | 2 56 |
| 57214—Stove pipe ..... | 2 40 |
| 57536—Pickles ..... | 13 23 |
| 58085—Claim No. 7899—Undercharge on cheese box stock ..... | 3 52 |
| 59028—Claim No. 9344—Undercharge, wood pulp ..... | 1 37 |
| 59414—Claim No. 10296—Undercharge, passenger rate ..... | 10 |
| 59797*a*— " 10457 " silver ore ..... | 1 15 |
| 59807— " 10784 " silver ore ..... | 11 31 |
| 60447— " 11024 " lumber ..... | 1 10 |
| 60853— " 10304 " pulpwood ..... | 50 |
| 60875— " 6483 " pork ..... | 15 78 |
| 61515— " 11467 " H. H. goods ..... | 1 39 |
| 62605— " 12375 " lumber ..... | 2 14 |
| 62651— " 12413—Outstanding ..... | 1 20 |
| 62767— " 12222—Undercharge, paint ..... | 19 |
| 63075—Oil, iron, steel from lockup ..... | 147 18 |
| 63136—Potatoes ..... | 7 00 |
| 63242—Claim No. 12709—Outstanding ..... | 1 77 |
| 63246— " 12769 " ..... | 1 51 |
| 63250— " 10632—Undercharge, pulpwood ..... | 31 65 |
| 63362—Potatoes ..... | 47 58 |
| 63460—Claim No. 12780—Loss, coal in transit ..... | 33 25 |
| 63700— " 12394—Outstanding ..... | 1 20 |
| 63704— " 12397 " ..... | 38 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, ETC.—*Continued.*

| | | |
|---|---|---|
| 63712—Claim No. 12396—Outstanding | $0 35 | |
| 63716— " 12856 " | 2 80 | |
| 63720— " 12398 " | 1 01 | |
| | | $368 94 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, NORTH COBALT.

| | | |
|---|---|---|
| 57086—Claim No. 10413—Outstanding account, undercharge on shipment cucumbers | $0 69 | |
| 61513— " 11912—Outstanding | 84 | |
| | | $1 53 |

TOWN OF COCHRANE, COCHRANE, ONT.

| | | |
|---|---|---|
| 56534—Taxes on lot No. 206 | $64 10 | |
| 56542—Taxes on lot No. 269 | 87 41 | |
| 57836—Water supplied | 36 96 | |
| | | $188 47 |

THE TORONTO WORLD, TORONTO, ONT.

| | | |
|---|---|---|
| 56708—Subscription | $3 00 | |
| 58459—Advertising demonstration car | 9 00 | |
| | | $12 00 |

TOLEDO, ST. LOUIS & WESTERN RAILROAD, TOLEDO, O.

| | | |
|---|---|---|
| 56930—Car service balance | $14 40 | |
| 58287— " " | 6 30 | |
| 58230— " " | 5 80 | |
| 59377— " " | 2 70 | |
| 59370— " repairs | 4 66 | |
| 59708— " service balance | 4 50 | |
| 60343— " " | 8 55 | |
| 59980— " repairs | 71 | |
| 61821— " service balance | 8 55 | |
| 61849—Ticket balance | 1 79 | |
| 62206—Car service balance | 8 55 | |
| 63550— " " | 5 40 | |
| | | $71 91 |

TRAVELERS INSURANCE COMPANY, HARTFORD, CONN.

| | | |
|---|---|---|
| 56956—Ticket balance | $3 44 | |
| 58335— " | 96 | |
| 58264— " | 69 | |
| 59423— " | 1 93 | |
| 59748— " | 1 24 | |
| 60389— " | 1 72 | |
| 60634— " | 1 38 | |
| 62234— " | 49 | |
| 62961— " | 2 34 | |
| | | $14 19 |

GEORGE TAYLOR HARDWARE CO., LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 57070—Claim No. 10558—Overcharge, rate on steel rails | $127 21 | |
| 57946—Galv. casing and iron pipe, etc. | 16 45 | |
| 58028—Claim No. 10789—Loss account, damage to wheel | 10 35 | |
| 58836— " 10972—Loss account, damage to stove | 3 56 | |
| 59908— " 10848—Damage, closet bowl | 4 30 | |
| 60951— " 10847—Damage, cook stove | 5 95 | |
| 61645— " 12138—Loss, churn lid | 1 28 | |
| 61885— " 12039—Loss, stone | 6 95 | |
| 61320— " 11806—Loss, acid | 8 93 | |
| 62321— " 12443—Damage, cauldron | 3 70 | |

GEORGE TAYLOR HARDWARE COMPANY, LIMITED, ETC.—*Continued.*

| | | |
|---|---|---|
| 62495—Fire clay, glasses and gauges | 7 03 | |
| 63188—Claim No. 12706 and 12707—Damage, hardware | 68 49 | |
| 63726—Claim No. 12697—Loss, acid | 12 54 | |
| | | $276 74 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, TEMAGAMI, ONT.

| | | |
|---|---|---|
| 57116—Claim No. 10545—Outstanding | $1 60 | |
| 60877— " 6483 " | 145 55 | |
| | | $147 15 |

THE TOWN OF CHARLTON, CHARLTON, ONT.

| | | |
|---|---|---|
| 57134—Lighting street, rear station | $14 50 | |
| | | $14 50 |

THE THOMAS COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57146—Repairing clocks | $10 50 | |
| 57538—Clocks | 5 50 | |
| 58578—Repairs to air brake clock | 2 00 | |
| 61460— " clock at Latchford | 5 00 | |
| 62544— " clock | 9 50 | |
| | | $32 50 |

TEXAS & NEW ORLEANS RAILROAD COMPANY, HOUSTON, TEXAS.

| | | |
|---|---|---|
| 57326—Car repairs | $0 33 | |
| | | $0 33 |

TALLMAN BRASS & METAL COMPANY, HAMILTON, ONT.

| | | |
|---|---|---|
| 57540—Brass rod | $27 22 | |
| 58127—Brass and copper | 31 13 | |
| 58468—Copper | 30 10 | |
| 59075—Copper tubes | 23 82 | |
| 59198—Brass and copper rods | 61 83 | |
| 60830—Brass rod | 51 13 | |
| 61546—Brass and copper | 11 40 | |
| 61774—Brass rod | 4 08 | |
| 63142—Copper tube | 8 93 | |
| | | $249 64 |

JOHN TAYLOR & CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57542—Soap | $22 00 | |
| 57989— " | 52 50 | |
| 59113— " | 49 70 | |
| 59206— " | 37 30 | |
| 60675— " | 13 50 | |
| 60826— " | 30 50 | |
| 61544— " | 42 90 | |
| 63069— " | 66 61 | |
| | | $315 01 |

TAYLOR & ARNOLD, LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 57544—Lock blocks | $49 80 | |
| 59115—Knuckles, lock blocks, etc. | 71 10 | |
| 59204—Lock blocks | 13 50 | |
| 60721—Lock blocks | 52 50 | |
| 60828—Knuckles, lock blocks | 48 00 | |
| 61989—Glasses and gaskets | 7 92 | |
| 63073—Lock blocks, knuckles | 44 50 | |
| | | $287 32 |

TORONTO & YORK COUNTY PATRIOTIC FUND ASSOCIATION, TORONTO, ONT.

| | | |
|---|---|---|
| 57583—Donation | $5,000 00 | |
| | | $5,000 00 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, NORTH BAY, ONT.

| | | |
|---|---|---|
| 58059—Claim No. 10067—Outstanding | $0 76 | |
| 59386— " 10871 " | 35 | |
| 59402— " 10815 " | 40 | |
| 59408— " 10814 " | 40 | |
| 59422— " 10873 " | 35 | |
| 59426— " 10872 " | 2 70 | |
| 60947— " 11212 " | 8 39 | |
| 61183— " 10225 " | 4 00 | |
| 61511— " 11721 " | 86 | |
| 61631— " 12215 & 10893 " | 7 71 | |
| 61883— " 10371 " | 14 16 | |
| 61444— " 11840 " | 51 | |
| 62062— " 10910 " | 15 61 | |
| 62759— " 12622 & 12621 " | 42 | |
| 63205— " 12764 " | 46 | |
| 63240— " 11886 " | 106 10 | |
| 57397— " 10536 & 10520 " | 4 80 | |
| 57114— " 10594, 10488 and 10537—Outstanding | 8 66 | |
| | | $176 64 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, COCHRANE, ONT.

| | | |
|---|---|---|
| 56789—One drawer lock | $0 65 | |
| 57110—Claim No. 9862—Overcharge, weight apples | 15 84 | |
| 58063— " 10552—Shortage on shipment | 5 70 | |
| 58079— " 10652 and 10716—Shortage on shipment | 1 12 | |
| 59017— " 10678—Outstanding | 5 00 | |
| 58842— " 10798— " | 3 36 | |
| 58954—Express charges on typewriter | 1 10 | |
| 61505—Claim No. 7933—Outstanding | 4 30 | |
| 63105— " 11853 " | 96 | |
| 62998— " 12624 " | 2 13 | |
| 63182— " 12580 " | 9 36 | |
| 63190— " 12707 " | 2 00 | |
| 63676— " 12719 " | 1 86 | |
| 63696— " 12471 " | 38 | |
| 63724— " 12161 " | 5 80 | |
| | | $59 56 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 58081—Claim No. 10345—Outstanding account, shipment short | $4 27 | |
| 58844— " 11014 and 10682—Outstanding | 2 96 | |
| 59910— " 11382—Outstanding | 10 00 | |
| | | $17 23 |

THE TEMISKAMING & NORTHERN ONTARIO RAILWAY AGENT, THORNLOE, ONT.

| | | |
|---|---|---|
| 58083—Claim No. 10314—outstanding account, damage to H.H. goods | $10 00 | |
| | | $10 00 |

J. G. TURNEY, WAHTAYBEAG, ONT.

| | | |
|---|---|---|
| 58113—Donation account, pulpwood alleged destroyed | $30 00 | |
| | | $30 00 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY AGENT, COBALT, ONT.

| | | |
|---|---|---|
| 57389—Claims Nos. 10324 and 5861—outstanding | $198 40 | |
| 57108—Claim No. 10575—outstanding | 3 15 | |
| 58131—Board of Trade dues—D. Hway. | 5 00 | |
| 57774—Water rates—Cobalt Water Commission | 18 00 | |
| 58790—Claim No. 11028—outstanding | 2 00 | |
| 58792— " No. 10073— " | 1 41 | |
| 58860—Water rates, Cobalt Water Commission | 18 00 | |
| 59912—Claim No. 11410—outstanding | 2 00 | |
| 60895—Water rates, Cobalt Water Commission | 18 00 | |
| 61507—Claim No. 10777—outstanding | 1 65 | |
| 61214—Disbursements *re* bush fires | 6 00 | |
| 61322—Claim No. 10482—outstanding | 76 | |
| 61358—Inspection scales | 3 00 | |
| 61420—Claim No. 12377—outstanding | 1 00 | |
| 61826— " No. 11712— " | 46 | |
| 62306—Copies by-law | 1 50 | |
| 62548—Water rates, Cobalt Water Commission | 18 00 | |
| 62736—Travelling expenses | 5 60 | |
| 59073—Typewriter ribbons, *Cobalt Telegraph* | 1 50 | |
| | | $305 43 |

TOLEDO, PEORIA & WESTERN RAILWAY COMPANY, PEORIA, ILL.

| | | |
|---|---|---|
| 58285—Car service balance | $6 30 | |
| 58228— " " | 15 75 | |
| 59706— " " | 10 80 | |
| 60341— " " | 8 55 | |
| 60594— " " | 8 10 | |
| 61819— " " | 1 80 | |
| 63548— " " | 45 | |
| | | $51 75 |

THE TEXAS & PACIFIC RAILWAY COMPANY, DALLAS, TEXAS.

| | | |
|---|---|---|
| 58427—Car repairs | $3 24 | |
| 59551— " " | 3 42 | |
| 59246— " " | 84 | |
| 60345— " service balance | 1 35 | |
| 60596— " " | 9 00 | |
| 61823— " " | 90 | |
| 62208— " " | 11 70 | |
| 62923— " " | 4 95 | |
| | | $35 40 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY AGENT, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 57852—Phone rental (Tem. Telephone Company) | $15 00 | |
| 61509—Claim No. 11964—outstanding | 17 03 | |
| 61376— " No. 12326— " | 4 58 | |
| 62576— " No. 12423— " | 4 80 | |
| 63192— " No. 12379— " | 84 | |
| | | $42 25 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY AGENT, PORQUIS JUNCTION, ONT.

| | | |
|---|---|---|
| 58030—Claim No. 10833—outstanding, demurrage, 2 cars pulpwood | $16 00 | |
| 59021— " No. 10525—outstanding | 1 88 | |
| | | $17 88 |

TORONTO DISINFECTANT COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 58356—Carbolacene | $30 10 | |
| 58717— " and blockettes | 47 80 | |

TORONTO DISINFECTANT COMPANY, TORONTO, ONT.—*Continued.*

| | | |
|---|---|---|
| 58898—Blockettes | 17 00 | |
| 60017—Carbolacene | 37 41 | |
| 60462— " | 37 41 | |
| 61718— " | 37 41 | |
| 62619— " | 38 28 | |
| 62876— " | 38 28 | |
| | | $283 69 |

MRS. NELLIE E. TAYLOR, COCHRANE, ONT.

| | | |
|---|---|---|
| 58525—Award, W. C. B., *re* alleged injuries, F. H. Taylor | $63 14 | |
| 58724— " " " " " | 30 00 | |
| 59631— " " " " " | 30 00 | |
| 59834— " " " " " | 30 00 | |
| 60843— " " " " " | 30 00 | |
| 61072— " " " " " | 30 00 | |
| 62173— " " " " " | 30 00 | |
| 62348— " " " " " | 30 00 | |
| | | $273 14 |

THORPE BROS., NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 58527—Services *re* injuries to F. H. Taylor | $59 22 | |
| 58987—Claims Nos. 10963, 4, 5, 1 and 2—damage to furniture | 2 50 | |
| 58692—Service *re* injuries to F. H. Taylor | 40 78 | |
| 59418—Claim No. 10999—damage to bookcase | 50 | |
| 59904— " No. 11161—damage to chairs | 25 | |
| 61499—Claims Nos. 11174, 11540—damage to chairs | 6 65 | |
| 61324—Claim No. 12232—damage to china cabinet | 75 | |
| 61448— " No. 12245—damage to chairs | 50 | |
| 61828—Claims Nos. 12275 and 12243—damage to furniture | 11 15 | |
| 62060—Claims Nos. 12242 and 12417—damage to furniture | 1 75 | |
| | | $124 05 |

CHAS. TAYLOR, CACHE BAY, ONT.

| | | |
|---|---|---|
| 58529—Services *re* alleged injuries to F. H. Taylor | $4 74 | |
| | | $4 74 |

THE THIEL DETECTIVE SERVICE COMPANY OF CANADA, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58959—Services and expenses of operatives | $240 22 | |
| 58918— " " " | 212 65 | |
| 59781— " " " | 233 15 | |
| 60258— " " " | 221 65 | |
| 61435— " " " | 185 40 | |
| | | $1,093 07 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY AGENT, DANE, ONT.

| | | |
|---|---|---|
| 59019—Claim No. 10719—outstanding account, shipment short | $0 35 | |
| | | $0 35 |

J. J. TURNER & SONS, PETERBOROUGH, ONT.

| | | |
|---|---|---|
| 59109—Tarpaulins | $67 20 | |
| 59200—Union Jack, tent | 29 13 | |
| 60964— " sash cord | 143 78 | |
| 61343—Pulley awning | 95 55 | |
| | | $335 66 |

TAYLOR INSTRUMENT COMPANIES, ROCHESTER, N.Y.

| | | |
|---|---|---|
| 59111—Thermometer | $5 53 | |
| | | $5 53 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY AGENT, MATHESON, ONT.

| | | |
|---|---|---|
| 59191—Water supplied | $5 00 | |
| 61426—Claim No. 12392—outstanding | 47 00 | |
| 62587— " No. 12485— " | 91 01 | |
| 62591— " No. 12470— " | 309 08 | |
| 62611— " No. 12446— " | 130 94 | |
| 62647— " No. 12327— " | 64 15 | |
| 62657— " No. 12468— " | 1 90 | |
| 63026— " No. 12705— " | 1 34 | |
| 63194— " No. 12545— " | 6 01 | |
| | | $656 43 |

TRINITY & BRAZOS VALLEY RAILWAY COMPANY, HOUSTON, TEX.

| | | |
|---|---|---|
| 59379—Car service balance | $3 60 | |
| | | $3 60 |

A. C. TEED, MCCOOL P.O., ONT.

| | | |
|---|---|---|
| 59425—Ties | $72 94 | |
| 59754— " | 40 40 | |
| | | $113 34 |

TOMSTOWN LUMBER COMPANY, TOMSTOWN P.O., ONT.

| | | |
|---|---|---|
| 59425—Ties | $295 25 | |
| 60064— " | 237 15 | |
| | | $532 40 |

TOWN OF TIMMINS, TIMMINS, ONT.

| | | |
|---|---|---|
| 59465—Water supplied | $359 85 | |
| 60966— " " | 188 85 | |
| 63177— " " | 171 90 | |
| 57727— " " | 220 35 | |
| | | $940 95 |

G. TANCREDI, M. P. DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 58748—Travelling expenses | $8 55 | |
| | | $8 55 |

TRANSCONTINENTAL RAILWAY, MONCTON, N.B.

| | | |
|---|---|---|
| 58858—Freight settlement | $207 91 | |
| 59750—Ticket balance | 581 71 | |
| | | $789 62 |

TORONTO WEEKLY RAILWAY & STEAMBOAT GUIDE, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58952—Subscription | $2 60 | |
| 62381—Subscription | 2 60 | |
| | | $5 20 |

TERRY & GORDON, TORONTO, ONT.

| | | |
|---|---|---|
| 59132—Claim No. 10152—Overcharge, weight lumber | $61 90 | |
| 61268—Overpayment *re* siding at M. P. No. 12, Porcupine | 5 56 | |
| | | $67 46 |

J. H. A. TAYLOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 59202—Bread | $1 08 | |
| 62543—Bread | 1 92 | |
| | | $3 00 |

TEMPLETON, KENLY & CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59208—Pawls, indicator, disk | $7 00 | |
| 60677—Handles | 50 | |
| | | $7 50 |

TREMONT & GULF RAILWAY COMPANY, WINNFIELD, LA.

| | | |
|---|---|---|
| 59368—Car repairs | $1 40 | |
| | | $1 40 |

TRANSIT COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59710—Car service balance | $10 52 | |
| 60347— " " | 5 69 | |
| 62210— " " | 87 | |
| | | $17 08 |

TELEGRAPH & TELEPHONE AGE, NEW YORK, N.Y.

| | | |
|---|---|---|
| 59657—Subscription | $2 00 | |
| | | $2 00 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, TIMMINS, ONT.

| | | |
|---|---|---|
| 59809—Claim No. 10137—Undercharge, weight, silver ore | $15 15 | |
| 62305—Duty paid on goods | 1 50 | |
| 63822—Ice supplied | 2 00 | |
| 56791—Board supplied relief staff | 1 75 | |
| 57399—Claims No. 10353, 10491, 10549—Outstanding | 332 31 | |
| | | $352 71 |

TENNESSEE CENTRAL RAILROAD COMPANY, NASHVILLE, TENN.

| | | |
|---|---|---|
| 59925—Repairs to cars | $2 14 | |
| 63790—Repairs to cars | 46 | |
| | | $2 60 |

TORONTO SALT WORKS, TORONTO, ONT.

| | | |
|---|---|---|
| 60673—Salt | $40 00 | |
| 61987—Salt | 100 00 | |
| | | $140 00 |

G. S. TATHAM, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 59906—Claim No. 11288—Loss account, damage to iron tonic | $2 03 | |
| 60869—Claim No. 11286—Damage to cough medicine | 1 10 | |
| | | $3 13 |

TOWN OF LATCHFORD, LATCHFORD, ONT.

| | | |
|---|---|---|
| 59928—Donation—General purposes | $200 00 | |
| | | $200 00 |

TOLEDO TERMINAL RAILROAD COMPANY, TOLEDO, OHIO.

| | | |
|---|---|---|
| 59978—Car repairs | $0 54 | |
| 61393—Car repairs | 2 72 | |
| | | $3 26 |

E. A. TILLEY (M.M. DEPT.), NORTH BAY, ONT.

| | | |
|---|---|---|
| 60202—Expenses, travelling | $1 00 | |
| 63352—Expenses, travelling | 2 50 | |
| | | $3 50 |

TUCKETT TOBACCO CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 60860—Stems | $10 00 | |
| | | $10 00 |

M. M. THIBEAULT, CHARLTON, ONT.

| | | |
|---|---|---|
| 60949—Claim No. 11663—Damage to castings | $1 80 | |
| | | $1 80 |

WM. TAYLOR, EARLTON P.O., ONT.

| | | |
|---|---|---|
| 61063—Ties | $187 41 | |
| | | $187 41 |

TIMES PRINTING COMPANY, HAMILTON, ONT.

| | | |
|---|---|---|
| 61345—Forms | $31 75 | |
| 61599— " | 11 25 | |
| 63077— " | 61 25 | |
| 63134— " | 38 70 | |
| | | $142 95 |

WM. L. TRACEY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 61551—Award W. C. B., *re* alleged injuries | $24 78 | |
| | | $24 78 |

TEMISKAMING L.O.L. NO. 60, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 62107—Commission on sales—"Excursion" | $105 05 | |
| | | $105 05 |

TORONTO DISTRICT LABOR COUNCIL, TORONTO, ONT.

| | | |
|---|---|---|
| 61082—Advertising in "Official Labor Day Souvenir" | $15 00 | |
| | | $15 00 |

TEMISKAMING & NORTHERN ONTARIO RAILWAY, AGENT, IROQUOIS FALLS.

| | | |
|---|---|---|
| 61442—Claim No. 12439—Outstanding account, shipment short | $1 26 | |
| 63107—Claims Nos. 12101, 12090, 12093—Outstanding account, rate paper cores | 11 07 | |
| 62574—Claim No. 12378—Outstanding account, shipment short | 96 | |
| | | $13 29 |

TRACK NECESSITIES COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 61776—Tongs | $9 25 | |
| | | $9 25 |

TEMISKAMING & NORTHERN ONTARIO RY. AGENT, SCHUMACHER.

| | | |
|---|---|---|
| 62323—Claim No. 11806, outstanding account, carboy acid broken | $1. 71 | |
| | | $1 71 |

TORONTO CARPET CLEANING COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 62491—Rugs cleaned | $7 50 | |
| | | $7 50 |

TEMAGAMI STEAMBOAT & HOTEL COMPANY, TEMAGAMI, ONT.

| | | |
|---|---|---|
| 62545—Groceries, fruit | $3 34 | |
| | | $3 34 |

TALLULAH FALLS RAILWAY, WASHINGTON, D.C.

| | | |
|---|---|---|
| 62925—Car service balance | $0 90 | |
| 63552—Car service balance | 2 25 | |
| | | $3 15 |

TEMISKAMING DISTRICT POULTRY ASSOCIATION, ENGLEHART, ONT.

| | | |
|---|---|---|
| 62406—Donation *re* 5th annual show | $5 00 | |
| | | $5 00 |

TEMISKAMING & NORTHERN ONTARIO RY. AGENT, WIDDIFIELD, ONT.

| | | |
|---|---|---|
| 63140—Outstanding amount paid messenger calling steam shovel | $1 00 | |
| | | $1 00 |

JAMES THOMPSON, OSSEO, ONT.

| | | |
|---|---|---|
| 63370—Ties | $144 21 | |
| | | $144 21 |

TEXAS MIDLAND RAILROAD, TERRELL, TEX.

| | | |
|---|---|---|
| 63792—Car repairs | $1 08 | |
| | | $1 08 |

UNION PACIFIC RAILROAD COMPANY, OMAHA, NEB.

| | | |
|---|---|---|
| 56677—Claims | $5 86 | |
| 56987—Car repairs | 8 40 | |
| 56934— " service balance | 21 15 | |
| 57120—Claims | 12 96 | |
| 57330—Car repairs | 1 11 | |
| 58291— " service balance | 24 75 | |
| 58429— " repairs | 20 | |
| 58234— " service balance | 87 75 | |
| 59381— " " " | 150 75 | |
| 59714— " " " | 54 45 | |
| 60351— " " " | 68 85 | |
| 59914—Claims | 9 09 | |
| 60600—Car service balance | 44 55 | |
| 61827—Car service balance | 36 90 | |
| 61326—Claims | 3 20 | |
| 61450—Claims | 2 00 | |
| 62214—Car service balance | 48 60 | |
| 62325—Claim | 35 06 | |
| 62497—Car repairs | 9 95 | |
| 62761—Claim | 3 91 | |
| 62927—Car service balance | 34 65 | |
| 63554—Car service balance | 32 55 | |
| | | $696 69 |

UNITED STATES STEEL PRODUCTS CO., NEW YORK, N.Y.

| | | |
|---|---|---|
| 56825—Steel channels | $11 97 | |
| 60723—Beams, Z-Ees, channels, angles | 89 60 | |
| | | $101 57 |

UNITED TYPEWRITER COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57049—Inspection, rental of machine, etc. | $22 60 | |
| 57323—Stencils, ribbons, note-books, etc. | 36 44 | |
| 57162—Type Bar and letter "E" | 60 | |
| 57546—Repairing machine, stencil paper, keys | 23 95 | |
| 57993—Typewriter and stationery | 219 72 | |
| 57856— " supplies and repairs | 113 20 | |
| 58470— " supplies | 216 38 | |
| 58879—Inspection and overhauling machines | 28 05 | |
| 59117—Stencil paper, ribbons | 162 69 | |
| 59467—Repairing typewriter | 9 35 | |
| 59210—Ribbons, stencil paper | 91 67 | |
| 60679—Typewriter repairs and supplies | 180 17 | |
| 60332—Note-books | 3 50 | |
| 60832—Typewriter, pencil sharpener | 140 79 | |

UNITED TYPEWRITER COMPANY, LIMITED, TORONTO, ONT.—*Continued.*

| | | |
|---|---|---|
| 61347—Stationery | 7 69 | |
| 61601—Extension phone rack and desk | 36 50 | |
| 61991—Typewriter | 115 42 | |
| 61662—Note-books and keys | 7 60 | |
| 62713—Inspection of typewriters | 18 00 | |
| 63079—Ribbons, repairs, etc. | 6 19 | |
| 62360—Cleaning, repairs typewriter | 8 35 | |
| 62550—Repairing, etc., typewriter | 5 45 | |
| 62744—Desk basket, repairs to typewriter | 13 10 | |
| 63144—Typewriter and supplies | 127 67 | |
| 63354—Supplies | 10 55 | |
| | | $1,605 63 |

UNION LUMBER CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57299—Claim No. 10312, overcharge in rate on spruce | $8 85 | |
| 61548—Lumber | 423 22 | |
| | | $432 07 |

UNITED COAL SALES COMPANY, DETROIT, MICH.

| | | |
|---|---|---|
| 57325—Smithing coal | $47 25 | |
| 58611— " " | 203 50 | |
| 61037— " " | 50 75 | |
| | | $301 50 |

UNION RAILROAD COMPANY, PITTSBURG, PA.

| | | |
|---|---|---|
| 56932—Car service balance | $9 90 | |
| 58289— " " " | 5 00 | |
| 58232— " " " | 1 35 | |
| 59440— " repairs | .11 | |
| 59712— " service balance | 99 00 | |
| 60349— " " " | 212 85 | |
| 60062— " repairs | 57 | |
| 60598— " service balance | 48 15 | |
| 60945—Claim No. 9751, outstanding weight silver ore | 3 83 | |
| 61825— " service balance | 69 75 | |
| 62008— " repairs | 20 | |
| 62212— " service balance | 9 45 | |
| 63178—Claim No. 12819, outstanding weight and rate silver ore.. | 39 55 | |
| 63692—Claim Nos. 12467, 11678, 12638, overcharge weight silver ore | 39 59 | |
| | | $539 30 |

UNION TANK LINE, NEW YORK, N.Y.

| | | |
|---|---|---|
| 56936—Car service balance | $14 98 | |
| 58293— " " " | 1 62 | |
| 58236— " " " | 1 60 | |
| 60353— " " " | 1 60 | |
| 60602— " " " | 5 34 | |
| 61829— " " " | 7 59 | |
| 62216— " " " | 3 44 | |
| 62929— " " " | 8 14 | |
| 63556— " " " | 6 11 | |
| | | $50 42 |

UNIVERSAL IRON & SUPPLY COMPANY, ST. LOUIS, MO.

| | | |
|---|---|---|
| 57949—Chalk | $4 50 | |
| 59119—Chalk | 4 50 | |
| | | $9 00 |

UNION REFRIGERATOR TRANSIT COMPANY, MILWAUKEE, WIS.

| | | |
|---|---|---|
| 59716—Car service balance | $1 54 | |
| 60604— " " " | 3 87 | |
| 63560— " " " | 1 90 | |
| | | $7 31 |

THE UNION MEAT MARKET, SCHUMACHER, ONT.

| | | |
|---|---|---|
| 60455—Claim No. 10818, loss account shortage one hog | $14 55 | |
| | | $14 55 |

DAVID UFLAND, ELK LAKE, ONT.

| | | |
|---|---|---|
| 60206—Clearing station grounds, Elk Lake | $243 20 | |
| 62031— " " " " | 243 20 | |
| 61222— " " " " | 235 60 | |
| 62552— " " " " | 135 52 | |
| | | $857 52 |

UNION CHURCH OF MATHESON, MATHESON, ONT.

| | | |
|---|---|---|
| 61176—Donation to rebuild church | $50 00 | |
| | | $50 00 |

UNIVERSITY OF CHICAGO PRESS, CHICAGO, ILL.

| | | |
|---|---|---|
| 61360—Journal, Political Economy | $0 38 | |
| | | $0 38 |

UNITED COAL SALES COMPANY, DETROIT, MICH.

| | | |
|---|---|---|
| 61778—Coal | $51 63 | |
| | | $51 63 |

H. L. USBORNE, COBALT, ONT.

| | | |
|---|---|---|
| 61830—Claim No. 11282, alleged loss drill steel | $40 56 | |
| | | $40 56 |

VAN TUYL & FAIRBANK, PETROLIA, ONT.

| | | |
|---|---|---|
| 57225—Oil well cups | $8 00 | |
| 57995—Valves | 50 00 | |
| | | $58 00 |

A. VANSTONE, M. M. DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 56752—Expenses, travelling | $8 40 | |
| | | $8 40 |

VOLUNTEER FIRE DEPARTMENT, COBALT, ONT.

| | | |
|---|---|---|
| 57724—Service *re* fire baggage car | $35 00 | |
| | | $35 00 |

VENDOME HOTEL COMPANY, LIMITED, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 58548—Board and lodging—engineering party | $18 00 | |
| 58794— " " " | 6 00 | |
| 59492— " " " | 12 50 | |
| 60968— " " " | 3 00 | |
| 61261— " " " | 7 00 | |
| 62499— " " " | 6 00 | |
| | | $52 50 |

DR. E. G. VERNON, COCHRANE, ONT.

| | | |
|---|---|---|
| 59032—Amount deducted from wages of S. Sotiroff, Section No. 38 | $5 00 | |
| 59715—Professional services rendered *re* F. Cassi | 20 00 | |
| | | $25 00 |

VERONA TOOL WORKS, PITTSBURG, PA.

| | | |
|---|---|---|
| 60725—Lining and claw bars, spike mauls and wrenches | $97 02 | |
| 63081—Chisels, gauges, etc. | 79 81 | |
| | | $176 83 |

PETER VAHEY, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 60817—Award, W. C. B., *re* alleged injuries | $10 53 | |
| | | $10 53 |

HENRY VERNON & SON, HAMILTON, ONT.

| | | |
|---|---|---|
| 61084—North Bay Directory | $2 50 | |
| 61464—Copies North Bay Directory | 5 00 | |
| | | $7 50 |

W. G. VERNER (RELIEVING FOREMAN), ENGLEHART, ONT.

| | | |
|---|---|---|
| 62501—Expenses travelling | $18 20 | |
| 62446— " " | 23 45 | |
| | | $41 65 |

HARRY VISSERING & COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 62547—Bell ringers | $13 35 | |
| | | $13 35 |

VIRGINIA CAROLINA RAILWAY, ABINGDON, VA.

| | | |
|---|---|---|
| 62931—Car service balance | $6 30 | |
| | | $6 30 |

VIRGINIA RAILWAY COMPANY, NORFOLK, VA.

| | | |
|---|---|---|
| 62933—Car service balance | $3 60 | |
| | | $3 60 |

A. VALLEE, COCHRANE, ONT.

| | | |
|---|---|---|
| 62578—Claim No. 12487—alleged loss shingles | $14 70 | |
| | | $14 70 |

VIRGINIA & SOUTHWESTERN RAILWAY COMPANY, BRISTOL, VA., TENN.

| | | |
|---|---|---|
| 63558—Car service balance | $1 35 | |
| | | $1 35 |

JAMES B. WILLIS, TRAVELLING AUDITOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 56455—Travelling expenses | $68 20 | |
| 56889— " " | 26 25 | |
| 56632— " " | 27 25 | |
| 57563— " " | 48 75 | |
| 57712— " " | 47 95 | |
| 58683— " " | 57 65 | |
| 58750— " " | 46 35 | |
| 59959— " " | 45 80 | |
| 60286— " " | 43 30 | |

JAMES B. WILLIS, TRAVELLING AUDITOR, ETC.—*Continued.*

| | | |
|---|---|---|
| 61861—Travelling expenses | $68 75 | |
| 61408— " " | 40 00 | |
| 62241— " " | 39 75 | |
| 62466— " " | 53 50 | |
| | | $613 50 |

THE WESTERN MARYLAND RAILWAY COMPANY, BALTIMORE, MD.

| | | |
|---|---|---|
| 56551—Car repairs | $8 49 | |
| 56991— " " | 5 35 | |
| 56938— " service balance | 90 | |
| 58295— " " | 9 90 | |
| 58242— " " | 18 45 | |
| 59387— " " | 6 30 | |
| 59444— " repairs | 5 33 | |
| 59720— " service balance | 90 | |
| 60359— " " | 9 45 | |
| 61833— " " | 45 | |
| 61934— " repairs | 1 89 | |
| | | $67 41 |

THE WHEELING & LAKE ERIE RAILROAD COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 56553—Car repairs | $14 49 | |
| 58240— " service balance | 9 45 | |
| 59385— " " | 1 35 | |
| 59442— " repairs | 92 | |
| 60357— " service balance | 11 25 | |
| 59986— " repairs | 55 | |
| 61395— " " | 5 80 | |
| 61936— " " | 14 54 | |
| | | $58 35 |

THE WABASH RAILROAD COMPANY, ST. LOUIS, MO.

| | | |
|---|---|---|
| 56631—Car repairs | $73 94 | |
| 58461—Interline freight balance | 95 29 | |
| 58238—Car service balance | 6 75 | |
| 59383— " " | 22 05 | |
| 59481— " repairs | 2 71 | |
| 59553— " " | 39 92 | |
| 59718— " service balance | 17 45 | |
| 59811—Claim | 13 20 | |
| 60355—Car service balance | 57 15 | |
| 59982— " repairs | 22 13 | |
| 60606— " service balance | 57 15 | |
| 61321— " repairs | 30 99 | |
| 61831— " service balance | 35 55 | |
| 61116— " repairs | 3 85 | |
| 62010— " " | 47 17 | |
| 62947—Passenger car mileage | 10 32 | |
| 62580—Claim | 4 05 | |
| 63564—Car service balance | 3 60 | |
| | | $543 27 |

WASHINGTON SOUTHERN RAILWAY COMPANY, RICHMOND, VA.

| | | |
|---|---|---|
| 56980—Car repairs | $15 70 | |
| 58135— " " | 57 | |
| 59555— " " | 2 58 | |
| 59785— " " | 2 64 | |
| 59984— " " | 39 | |
| 61397— " " | 1 23 | |
| 63644— " " | 27 | |
| | | $23 38 |

WARWICK BROS. & RUTTER, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 57327—Books | $34 50 | |
| 57164—Journal | 13 50 | |
| 57554—Telegraph ledgers | 19 00 | |
| 57997—Receipt book | 12 00 | |
| 58472—Envelopes and pay cheques | 105 00 | |
| 58763—Pens | 7 35 | |
| 59218—Forms | 50 00 | |
| 60693— " envelopes | 445 00 | |
| 60336—Despatchers' books | 21 00 | |
| 61349—Stationery | 77 50 | |
| 61720—Forms | 103 60 | |
| 62441—Oil | 2 20 | |
| 63085—Forms, claims register, etc. | 420 50 | |
| 63146—Despatch trains order books | 21 00 | |
| | | $1,332 15 |

WOOD, VALLANCE & COMPANY, HAMILTON, ONT.

| | | |
|---|---|---|
| 57329—Nails | $4 12 | |
| 57550—Augers | 7 80 | |
| 58003—Locks | 6 15 | |
| 60685—Pulleys | 1 00 | |
| 60840—Handles, springs, rakes, etc. | 28 38 | |
| 61041—Hooks and eyes, locks | 19 21 | |
| 59216—Steel spring wire | 75 | |
| 60338—Grain scoops | 8 00 | |
| 60970—Wood blocks | 4 56 | |
| 61355—School bells | 32 10 | |
| 61993—Shears, hose, rakes | 16 85 | |
| | | $128 92 |

JACK WATSON & COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 57331—Bluestone | $81 00 | |
| 58480—Telegraph crystals | 58 50 | |
| 60729—Bluestone and cartage | 144 40 | |
| 61351— " | 117 00 | |
| 61550— " crystals | 117 00 | |
| 63087— " | 47 25 | |
| | | $565 15 |

THE WHITMAN & BARNES MANUFACTURING CO., ST. CATHARINES, ONT.

| | | |
|---|---|---|
| 57333—Drills | $31 38 | |
| 58001—Wrenches, hammers and cotters | 31 35 | |
| 58476—Drills, keys, cotters and wrenches | 16 93 | |
| 58961—Drills, wrenches, etc. | 69 13 | |
| 59212—Wrenches, cotters, keys | 63 77 | |
| 60691—Wrenches, hammers | 25 47 | |
| 60334—Wrenches | 11 88 | |
| 60838—Cotters | 28 63 | |
| 61353—Cotters | 23 15 | |
| 61780—Wrenches, hammers | 40 72 | |
| 62668—Wrenches, hammers | 39 63 | |
| 62746—Wrenches, drills and keys | 70 09 | |
| | | $452 13 |

WABI IRON WORKS, LIMITED, NEW LISKEARD, ONT.

| | |
|---|---|
| 57401—Claims Nos. 10590 and 10553—Siding rebate | $207 00 |
| 58584—Repairing scales | 1 95 |
| 59121—Castings | 60 42 |
| 58838—Claim No. 11107, siding rebate | 42 90 |

WABI IRON WORKS, LIMITED, ETC.—*Continued.*

| | | |
|---|---|---|
| 59494—Repairs to ditcher | 4 65 | |
| 59920—Claims No. 11448 and 11398—Loss account, shortage iron | 3 53 | |
| 63356—Castings | 1 00 | |
| | | $321 45 |

WHELAN & NEWTON, COBALT, ONT.

| | | |
|---|---|---|
| 57403—Claim No. 9709—Loss account, shortage, coal | $16 00 | |
| | | $16 00 |

J. T. WELBOURN, UNO PARK, ONT.

| | | |
|---|---|---|
| 57405—Claim No. 10498—Loss account, shortage bag shorts | $1 52 | |
| 58087— " 10588—Loss account, damage to eggs | 1 20 | |
| 61187— " 11147—Loss, one bag whole beans | 9 02 | |
| | | $11 74 |

C. G. WATSON, ENGINEERING DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 57065—Travelling expenses | $6 35 | |
| 56754—Travelling expenses | 4 00 | |
| | | $10 35 |

WHITE STAR DOMINION LINE, MONTREAL, QUE.

| | | |
|---|---|---|
| 56600—Refund of amount over remitted on B-C. 25690 | $0 40 | |
| | | $0 40 |

GUSTAV WIEDEKE & CO., DAYTON, OHIO.

| | | |
|---|---|---|
| 57548—Expanders | $26 96 | |
| 58133—Mandrels for expanders | 8 40 | |
| | | $35 36 |

E. T. WRIGHT CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 57552—Lanterns | $21 75 | |
| 59077— " and founts | 48 30 | |
| 60689— " and founts, etc. | 48 30 | |
| | | $118 35 |

T. E. WARNER, MACHINIST, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57577—Travelling expenses | $0 75 | |
| | | $0 75 |

THE WORLD'S ONLY DUSTLESS BRUSH COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57999—Brush | $3 75 | |
| 62748—Brooms | 7 50 | |
| | | $11 25 |

WELLSVILLE & BUFFALO R. R. CORPORATION, BUFFALO, N.Y.

| | | |
|---|---|---|
| 58297—Car service balance | $15 30 | |
| 58244— " " | 99 45 | |
| 59389— " " | 58 05 | |
| 59446— " repairs | 2 34 | |
| 59722— " service balance | 94 95 | |
| 60361— " " | 138 60 | |
| 60610— " " | 78 30 | |
| 62935— " " | 4 95 | |
| 63562— " " | 45 | |
| | | $492 39 |

WEAVER COAL COMPANY, BUFFALO, N.Y.

| | | |
|---|---|---|
| 58347—Coal | $100 38 | |
| 58719— " | 213 49 | |
| 58956— " | 49 43 | |
| 59186— " | 78 66 | |
| 60727— " | 235 20 | |
| 60953—Claim No. 11523—Overcharge, freight | 1 00 | |
| | | $678 16 |

ARTHUR WILSON, KENEBEEK, ONT.

| | | |
|---|---|---|
| 58463—Ties | $126 00 | |
| | | $126 00 |

THE WESTERN CLASSIFICATION COMMITTEE, CHICAGO, ILL.

| | | |
|---|---|---|
| 57702—Subscription of "Western Classification Renewal" | $1 00 | |
| 59193—Subscription of "Western Classification Renewal" | 1 00 | |
| | | $2 00 |

THE WESTERN TRUNK LINE COMMITTEE, CHICAGO, ILL.

| | | |
|---|---|---|
| 57952—Tariffs and supplements | $1 04 | |
| 62309—Tariffs and supplements | 3 06 | |
| | | $4 10 |

A. C. WHITE, PORCUPINE, ONT.

| | | |
|---|---|---|
| 58032—Claim No. 10754—Overcharge in rate, pulpwood | $10 48 | |
| 62175—Refund, deposit on siding | 68 53 | |
| | | $79 01 |

A. T. WILEY & CO., LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 58474—Dishes | $57 16 | |
| | | $57 16 |

J. B. WILSON, TORONTO, ONT.

| | | |
|---|---|---|
| 58478—Track sanders | $48 00 | |
| 60687—Track sanders | 48 00 | |
| | | $96 00 |

F. H. WHITTELSEY COMPANY, WINDSOR LOCKS, CONN.

| | | |
|---|---|---|
| 58482—Yellow copy paper | $25 50 | |
| | | $25 50 |

WARDEN KING, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 58585—Grate bars | $5 33 | |
| 62383—Grate bars | 10 66 | |
| | | $15 99 |

WESTERN CANADA FLOUR MILLS CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 58989—Claim No. 10874, account cars over-carried | $8 00 | |
| | | $8 00 |

WICHITA FALLS & NORTHWESTERN RAILWAY CO., WICHITA FALLS, TEX.

| | | |
|---|---|---|
| 59313—Car service balance | $1 35 | |
| 59988—Car repairs | 96 | |
| | | $2 31 |

WABASH PITTSBURG TERMINAL RAILWAY CO., PITTSBURG, PA.

| | | |
|---|---|---|
| 59391—Car service balance | $10 35 | |
| 59557— " repairs | 1 65 | |
| 60363— " service balance | 8 55 | |
| 61319— " repairs | 36 | |
| | | $20 91 |

FREDERICK WILSON, McCOOL P.O., ONT.

| | | |
|---|---|---|
| 59425—Ties | $24 73 | |
| 59754—Ties | 13 40 | |
| | | $38 13 |

WELLAND VALE MANUFACTURING CO., LIMITED.

| | | |
|---|---|---|
| 58900—Scythes and snaths | $68 21 | |
| | | $68 21 |

THE WILLIAMS PIANO COMPANY, LIMITED, OSHAWA, ONT.

| | | |
|---|---|---|
| 59424—Claim No. 10872, loss account piano destroyed by fire | $450 00 | |
| | | $450 00 |

WABI KON CAMP, LAKE TEMAGAMI, ONT.

| | | |
|---|---|---|
| 59709—Advertising in folder | $50 00 | |
| | | $50 00 |

WORK & FRETZ, DETROIT, MICH.

| | | |
|---|---|---|
| 59813—Claims, overcharge in freight | $12 38 | |
| 59922— " " " " | 111 20 | |
| 60879— " " " " | 20 70 | |
| 60955— " " " " | 2 00 | |
| 61189— " " " " | 34 05 | |
| 61501— " " " " | 24 45 | |
| 61651— " " " " | 7 28 | |
| 62079— " " " " | 50 31 | |
| 61378— " " " " | 10 55 | |
| 61452— " " " " | 33 95 | |
| 62066— " " " " | 9 88 | |
| 62763— " " " " | 44 60 | |
| 62765— " " " " | 39 54 | |
| 63207— " " " " | 40 96 | |
| 62582— " " " " | 30 65 | |
| | | $472 50 |

WORKMEN'S COMPENSATION BOARD, TORONTO, ONT.

| | | |
|---|---|---|
| 59863—Assessment | 149 53 | |
| | | $149 53 |

MR. & MRS. J. N. WALTON, KEYSTOWN, SASK.

| | | |
|---|---|---|
| 59885—Claim No. 11427, loss account baggage burned | $200 00 | |
| | | $200 00 |

WALTER F. WULLAN, HEASLIP, ONT.

| | | |
|---|---|---|
| 60449—Claim No. 11109, overcharge in weight cattle | $7 25 | |
| | | $7 25 |

WAGAR & GRIFFITH FURNITURE COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 60731—Mattresses | $19 20 | |
| 61437— " | 14 40 | |
| 63083—Tables | 17 75 | |
| | | $51 35 |

ISAAC WALLE, COCHRANE, ONT.

| | | |
|---|---|---|
| 59836—Clearing bush, Cochrane townsite | $100 00 | |
| 62033— " station grounds, Kelso, certificate No. 1 | 160 00 | |
| 62573— " station grounds, Kelso, certificate No. 2 | 240 00 | |
| 62474— " station grounds, Kelso, certificate No. 3 | 160 00 | |
| | | $660 00 |

F. W. WOOLWORTH CO., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 59916—Claim No. 11115, loss account damage to tumblers, etc. | $1 17 | |
| 60881— " " 11440, 11438, damage to glass tumblers | 1 13 | |
| 62081— " " 12136, damage to chinaware | 1 02 | |
| 61410— " " 11591 and 11687, loss skin foods and cleanser | 50 | |
| 62607— " " 12424, damage to cups and saucers | 78 | |
| 62914— " " 12785, damage to pictures | 58 | |
| 63256— " " 12879, loss and damage to gloves | 40 | |
| | | $5 58 |

J. WEBSTER, M. P. DEPT., NORTH BAY, ONT.

| | | |
|---|---|---|
| 59924—Travelling expenses | $1 60 | |
| | | $1 60 |

WALTER WALSTROM, MONTEITH P.O., ONT.

| | | |
|---|---|---|
| 60064—Ties | $149 19 | |
| | | $149 19 |

S. WEST, MCCOOL, ONT.

| | | |
|---|---|---|
| 60340—Butter | $6 00 | |
| 60342—Carrots, beets, potatoes | 82 10 | |
| | | $88 10 |

WESTERN RAILWAY OF ALABAMA, TORONTO.

| | | |
|---|---|---|
| 60608—Car service balance | $2 25 | |
| 61835—Car service balance | 4 50 | |
| | | $6 75 |

WEST DISINFECTING COMPANY, TORONTO.

| | | |
|---|---|---|
| 60834—Protectus fluid | $26 25 | |
| | | $26 25 |

C. L. WILLIAMS, CONNAUGHT STATION, ONT.

| | | |
|---|---|---|
| 60836—Lumber | $349 75 | |
| 61995—Lumber | 240 67 | |
| 61328—Claim No. 11855, loss pike poles | 7 14 | |
| 61552—Lumber | 308 00 | |
| | | $905 56 |

J. J. WALSH, TEMAGAMI, ONT.

| | | |
|---|---|---|
| 60845—Donation *re* advertising Lake Temagami | $100 00 | |
| 61196—Donation *re* advertising Lake Temagami | 100 00 | |
| | | $200 00 |

WATSON COMPANY, LIMITED, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 60883—Claim No. 11285, loss account syrup destroyed | $0 95 | |
| 61647— " " 11826, damage to seven jars | 52 | |
| 62916— " " 12808, loss tins peas | 26 | |
| | | $1 73 |

MRS. S. D. WALKER, HUNTSVILLE, ONT.

| | | |
|---|---|---|
| 60957—Claim No. 10893, loss H.H. goods in transit | $160 00 | |
| | | $160 00 |

R. W. WOODS, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 61649—Claim No. 11672, alleged loss two quarts Luxo | $2 50 | |
| | | $2 50 |

W. WARD, GARDENER, ENGLEHART, ONT.

| | | |
|---|---|---|
| 61264—Travelling expenses | $4 50 | |
| | | $4 50 |

PHILIP WENNERSHEIMER, MCCOOL, P.O.

| | | |
|---|---|---|
| 61500—Ties | $15 60 | |
| 61500—Ties | 7 98 | |
| | | $23 58 |

E. B. WHORLEY, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 62064—Claim No. 11538, alleged loss bag carrots | $1 00 | |
| | | $1 00 |

WEST DOME CONSOLIDATED MINES, LIMITED, SOUTH PORCUPINE, ONT.

| | | |
|---|---|---|
| 62609—Claim No. 12446, loss car coal by fire | $174 87 | |
| | | $174 87 |

WARRELL & YATES, COCHRANE, ONT.

| | | |
|---|---|---|
| 62659—Claim No. 12486, alleged loss oats | $42 20 | |
| 63254—Claim No. 11038, damage to potatoes by frost | 54 65 | |
| | | $96 85 |

W. J. WILSON, TORONTO, ONT.

| | | |
|---|---|---|
| 62428—Repairing chair | $1 00 | |
| | | $1 00 |

WATERLOO MANUFACTURING CO., LIMITED, WATERLOO, ONT.

| | | |
|---|---|---|
| 62584—Claim No. 12544, damage to threshing machine | $1,328 88 | |
| | | $1,328 88 |

M. P. WASHBURN, LOUISVILLE, KY.

| | | |
|---|---|---|
| 63092—Tariffs | $5 47 | |
| | | $5 47 |

R. B. WATSON, COBALT, ONT.

| | | |
|---|---|---|
| 63728—Claim No. 12674, bottle water alleged broken | $1 48 | |
| | | $1 48 |

WM. YOUNG, GENERAL ROADMASTER, NORTH BAY, ONT.

| | |
|---|---|
| 56885—Travelling expenses | $8 50 |
| 56756— " " | 10 40 |
| 57673— " " | 4 60 |
| 57884— " " | 8 30 |
| 58685— " " | 42 50 |
| 59354— " " | 2 80 |
| 59859— " " | 2 50 |
| 60292— " " | 9 60 |

WM. YOUNG, GENERAL ROADMASTER, NORTH BAY, ONT.—*Continued.*

| | | |
|---|---|---|
| 61603—Travelling expenses | $8 05 | |
| 61266— " " | 2 85 | |
| 62343— " " | 8 20 | |
| 62484— " " | 10 00 | |
| | | $118 30 |

YOUNG COMPANY, LIMITED, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57441—Groceries | $191 76 | |
| 57556—Groceries | 103 05 | |
| 58005—Bon Ami and lye | 10 75 | |
| 58089—Claims No. 10401 and 10527, shortage 1 case milk | 6 90 | |
| 58034—Claim No. 10627, shortage 2 bags potatoes | 2 10 | |
| 58484—Groceries, Bon Ami and lye | 54 92 | |
| 58881—Hay | 144 72 | |
| 59220—Hay, blankets, groceries | 586 47 | |
| 60681—Groceries | 499 59 | |
| 60344—Groceries, etc. | 257 62 | |
| 60862—Commissary | 580 03 | |
| 60972—Commissary | 16 15 | |
| 60959—Claim No. 11710, loss barrel pork | 31 36 | |
| 61357—Grocery supplies | 181 76 | |
| 61997—Groceries | 517 53 | |
| 61554—Sugar, flour, etc. | 113 63 | |
| 62312—Groceries | 721 31 | |
| 63091— " | 1,170 66 | |
| 62670— " | 389 08 | |
| 63148—Switching charges on car hay | 1 50 | |
| 63150—Groceries | 124 94 | |
| 63358— " | 213 01 | |
| 63462— " | 228 68 | |
| | | $6,147 52 |

YE TOGGERY SHOP, COCHRANE, ONT.

| | | |
|---|---|---|
| 57118—Claim No. 10436, loss 2 dozen pair sox | $5 14 | |
| 61193— " 11502, loss boots | 8 70 | |
| 61832— " 11501, loss caps | 2 55 | |
| | | $16 39 |

FREDERICK YOUNG, CHICAGO, ILL.

| | | |
|---|---|---|
| 58007—Burners | $6 00 | |
| | | $6 00 |

JOHN YORKSTON, NORTH BAY, ONT.

| | | |
|---|---|---|
| 57786—Award W. C. B. *re* alleged injuries | $45 30 | |
| | | $45 30 |

W. J. YATES, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 58036—Claims, loss and damage to liquor | $6 94 | |
| 59023— " " " " " " | 79 70 | |
| 58840— " " " " " " | 3 58 | |
| 59815— " " " " " " | 5 19 | |
| 60885— " " " " " " | 12 37 | |
| 60961— " " " " " " | 1 11 | |
| 61191— " " " " " " | 1 09 | |
| 61503— " " " " " " | 5 93 | |
| 61653— " " " " " " | 95 | |
| 61887— " " " " " " | 94 | |
| 62083— " " " " " " | 59 | |
| 61330— " " " " " " | 3 77 | |
| 61440— " " " " " " | 14 57 | |

W. J. YATES, NEW LISKEARD, ONT.—*Continued.*

| | | |
|---|---|---|
| 61834—Claims, loss and damage to liquor | $7 03 | |
| 62068— " " " " " " | 1 01 | |
| 62327— " " " " " " | 19 02 | |
| 62769— " " " " " " | 18 96 | |
| | | $182 75 |

THE YALE & TOWNE MANUFACTURING COMPANY, STAMFORD, CONN.

| | | |
|---|---|---|
| 58486—Door closers | $26 25 | |
| 62314—Differential block | 11 55 | |
| | | $37 80 |

THE YOUNG LUMBER COMPANY, NORTH BAY, ONT.

| | | |
|---|---|---|
| 58772—Lumber | $519 54 | |
| 60683— " | 268 24 | |
| 60116— " | 226 60 | |
| 60974—Freight deducted in error | 7 28 | |
| 61999—Lumber | 378 65 | |
| 61664—Roofing | 457 65 | |
| 62667—Lumber | 1,518 32 | |
| 62672— " | 949 75 | |
| 63152— " | 2,142 68 | |
| 63360—Freight deducted in error | 4 00 | |
| | | $6,472 71 |

YORK SPRINGS, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 60394—Water | $2 00 | |
| 61362— " | 4 00 | |
| 62385— " | 50 | |
| | | $6 50 |

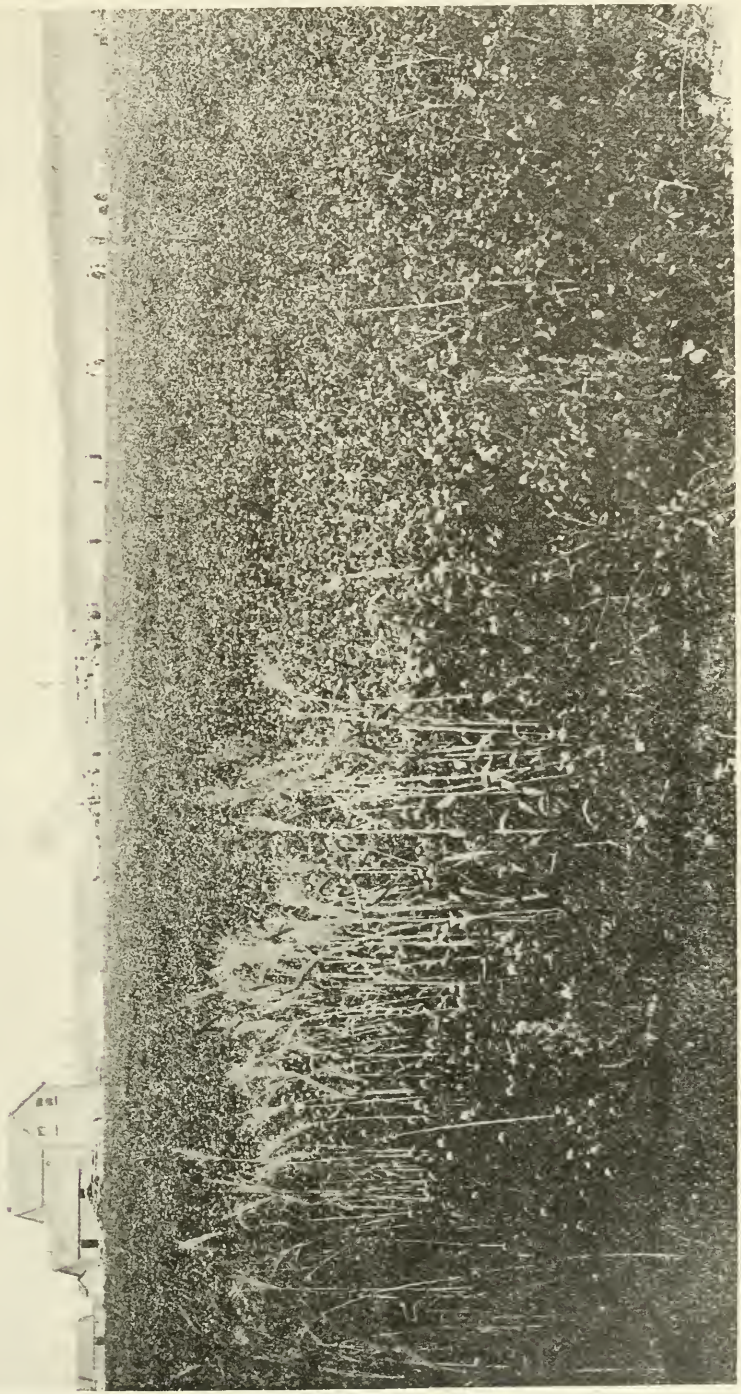
ZANESVILLE & WESTERN RAILWAY COMPANY.

| | | |
|---|---|---|
| 61890—Car repairs | $2 45 | |
| | | $2 45 |

## RECAPITULATION ACCOUNTS PAYABLE.

NOVEMBER 1ST, 1915, TO OCTOBER 31ST, 1916.

| | | |
|---|---|---|
| General Ledger Balance, Accounts Payable as of November 1st, 1915 | | $432,815 65 |
| Disbursements for year, November 1st, 1915, to October 31st, 1916, as per detailed statement | | 3,651,507 28 |
| Cash payments by Treasurer during year | $3,557,969 45 | |
| General Ledger Balance, Accounts payable as of October 31st, 1916 | 526,353 48 | |
| | $4,084,322 93 | $4,084,322 93 |



Red Clover; three tons yield per acre. Monteith Government Farm, year 1915.

# CONTRACTS, AGREEMENTS, ETC.

RE INSTALLATION HEATING AND PLUMBING SYSTEM, PASSENGER STATION, TIMMINS.

Tenders received as follows:

| | |
|---|---|
| A. Brazeau, Timmins, Ont. | $2,390 00 |
| S. J. Cherry, North Bay, Ont. | 2,472 00 |
| F. R. Gibson, Haileybury, Ont. | 2,700 00 |
| Cochrane Hardware, Ltd., North Bay | 2,649 00 |

Contract awarded A. Brazeau, Timmins, Ont., lowest tenderer.

RE ADDITIONS TO MACHINE SHOP, NORTH BAY JUNCTION, ONT.

Tenders received as follows:

| | |
|---|---|
| Henderson & Angus | $1,600 00 |
| Jeffrey & Stevens | 2,191 00 |
| W. A. Martyn | 1,430 00 |

Contract awarded W. A. Martyn, lowest tenderer.

RE INSTALLATION HEATING AND PLUMBING SYSTEMS IN FOUR SEMI-DETACHED TENEMENT HOUSES, IROQUOIS FALLS, ONT.

Tenders received as follows:

| | |
|---|---|
| F. R. Gibson, Haileybury, Ont. | $1,440 00 |
| Cochrane Hardware, Ltd., North Bay, Ont. | 1,496 00 |
| A. Brazeau, Timmins | 1,640 00 |

Contract awarded F. R. Gibson, lowest tenderer.

RE ELECTRIC WIRING, FOUR TENEMENT HOUSES, IROQUOIS FALLS, ONT.

Tenders received as follows:

| | |
|---|---|
| E. M. Allworth, Timmins, Ont. | $240 00 |
| Electric Supply Co., North Bay | 375 00 |
| D. Clutchey, Haileybury, Ont. | 285 93 |

Contract awarded E. M. Allworth, lowest tenderer.

INSTALLATION, PLUMBING AND DRAINAGE SYSTEM NO. 10 PASSENGER STATION, IROQUOIS FALLS.

Tenders received as follows:

| — | Completion. | Plumbing System. | Tile Drain per lin. ft. | Tile Drain Complete. | Total. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| A. Brazeau, Timmins | 5 weeks | 475 00 | 1 95 | 1,365 00 | 1,840 00 |
| Cochrane Hdwe. Ltd., North Bay | 6 " | 550 00 | 65 | 455 00 | 1,005 00 |
| S. J. Cherry, North Bay | 6 " | 508 00 | 80 | 560 00 | 1,068 00 |
| F. R. Gibson, Haileybury | 6 " | 435 00 | 1 25 | 875 00 | 1,310 00 |
| J. Murphy, New Liskeard | 4 " | 610 00 | 90 | 630 00 | 1,240 00 |

Contract awarded Cochrane Hardware, Ltd., lowest tenderer.

## CONTRACTS EXTENDED

*Canada Railway News Co.*

Contract for train privileges extended for period one year from January 1st, 1916 to January 1st 1917, same terms and conditions.

*Canada Railway News Co.*

Contract for lease of space in Cobalt Station for purpose selling books, newspapers, etc., extended for period one year from August 1st, 1916 to July 31st, 1917, same terms and conditions.

## NEW LISKEARD WHARF.

### Land Titles Act.

TEMISKAMING & NORTHERN ONTARIO RAILWAY COMMISSION registered owner of the freehold land registered in the office of Land Titles at Haileybury as parcel No. 5152 in the register for the District of Nipissing, North Division in consideration of the sum of one dollar ($1.00) and other good and valuable consideration paid to it transfers to His Majesty the King represented herein by The Honourable The Minister of Public Works for Canada, the lands hereinafter particularly described, namely:

Part of Lot 9 in the First Concession of the Township of Dymond in the District of Temiskaming and Province of Ontario, more particularly described as follows:

COMMENCING at the north-west corner of Lot 9, at the intersection between the line dividing Lots 8 and 9 and the line between Concessions 1 and 2, in a direction due east along the said concession line for a distance of fifteen hundred and twenty-eight (1,528) and fifty-six hundredths (56/100) feet to its intersection with the east line of Boulevard Street produced; then in a direction south, twenty-one (21) degrees and sixteen (16) minutes west, along the said east line of Boulevard Street for a distance of one hundred and eighty-six (186) feet and nine (9) inches; then in a direction due east for a distance of two hundred and thirty-nine (239) feet and four (4) inches, to the starting point of the land required and hereinafter described as follows:

FROM the starting point, as above indicated, in a direction due east for a distance of one hundred and twenty (120) feet and eleven (11) inches; then south, fifty-six (56) degrees and fifty-seven (57) minutes east, for a distance of two hundred and sixty-two (262) feet and eight (8) inches (this last line and the preceding one being boundaries of the land sold lately by K. Farah to the Dominion Government); then south thirty-four (34) degrees and thirty-eight (38) minutes west, for a distance of sixty-six (66) feet; then north fifty-six (56) degrees and fifty-seven (57) minutes west for a distance of three hundred and sixty-two (362) feet and three (3) inches, the starting point as shown tinted red on annexed plan, comprising an area of twenty thousand six hundred and twenty-five (20,625) square feet, or forty-seven hundredths (47/100) of an acre, as shown on the plan hereto annexed.

The bearings given are astronomic, being part of said parcel.

AND His Majesty the King represented herein by The Honourable The Minister of Public Works for Canada to the intent that the burden of these covenants

may run with the land aforesaid for himself, his successors and assigns, hereby covenants and agrees with the Temiskaming and Northern Ontario Railway Commission, its successors and assigns:

(1) To keep the wharf at present situate and being upon the said lands at all times hereafter in good repair and condition.

(2) To permit the Temiskaming and Northern Ontario Railway Commission at all times hereafter to make such reasonable use of the said wharf as may be necessary for the purpose of conveying any traffic required to be conveyed between the said wharf and the railway of the said Temiskaming and Northern Ontario Railway Commission.

The true intent and meaning of this covenant being that no obstruction shall be placed by or on behalf of His Majesty the King, represented herein by the Honourable the Minister of Public Works for Canada, to the transhipping of freight from or to said wharf to or from the cars standing on the spur line of the Temiskaming and Northern Ontario Railway Commission on the lands adjoining the lands hereby transferred.

DATED the 7th day of June A.D. 1916.

WITNESS:
SIGNED, SEALED AND DELIVERED by the Acting Minister of Public Works and countersigned by the Secretary this 7th day of June, A.D. 1916, in my presence:

T. A. CHASSE, *Law Clerk.*

A. B. ODLUM.

J. D. REID, Acting Minister of Public Works.
R. C. DESROCHERS.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART, *Chairman.*
W. H. MAUND, *Secretary-Treasurer.*

THIS AGREEMENT made and entered into this first day of April, A.D. 1916.

BETWEEN:

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION hereinafter called the Commission.

—and—

PHILIP G. KIELY, WILLIAM E. SMITH AND ALFRED A. AMOS, carrying on business under the firm name and style of KIELY, SMITH AND AMOS hereinafter called the Lessees.

WITNESSETH that for and in consideration of the covenants and agreements herein contained the parties hereto have agreed as follows:

1. The Commission agrees to furnish during every week day from and after the date hereof until the 31st day of December, 1916, from nine o'clock a.m. to five

o'clock p.m. for the use of the Lessees a telegraph wire between the offices of the Lessees at Timmins, South Porcupine and Cobalt and the telegraph office of the Canadian Pacific Railway Company at North Bay, and also to furnish instruments and local batteries and material to maintain such batteries at said offices, and the necessary main batteries for the operation of said wire; said wire shall be connected at North Bay with the wire leased by the Canadian Pacific Railway Company. The Commission agrees to keep said wire in good working order and repair, it being understood and agreed that in the event of the interruption of said wire the Lessees shall immediately notify the Commission of such interruption and the said Commission shall repair said wire without unnecessary delay. It being further understood and agreed that the Commission shall not be held responsible for any defects or delays in the working of said wire except when a continued interruption for one day or more occurs, in which event a *pro rata* abatement of the rental of said wire shall be made for each day of continued interruption, computation being made on the basis of thirty days to the month.

2. It is understood and agreed that the Commission retains the right to use said wire except and otherwise than during the hours in which same is set apart for the use of the Lessees as herein specified, PROVIDED ALWAYS and it is hereby agreed between the parties hereto that the Commission shall have the right to use said wire at any time when in its judgment the necessities of the service to the general public so require.

3. The Lessees for the use of said wire for the period as hereinbefore specified agree to pay the Commission the sum of four thousand six hundred and thirty-five dollars ($4,635.00) in three equal, consecutive, quarterly payments of one thousand five hundred and forty-five dollars ($1,545) each in advance: the first of such payments to become due and to be made on the date hereof.

4. The Lessees agree with the Commission to provide at their own expense the necessary operators who shall be satisfactory to the Commission, and also to provide office room for the operation of said wire and instruments at the offices of the said Lessees in the Town of Cobalt, Timmins and South Porcupine respectively.

5. It is understood and agreed that said wire herein provided for to be set apart for the benefit of the Lessees as aforesaid shall be used by the Lessees and their employees only in the transmission of messages concerning the business and affairs of the said Lessees, and that said wire shall not be used in any manner for the transmission of messages for the public or for any person or persons other than the Lessees.

6. It is further understood and agreed that no other office or place shall be connected with said wire either directly or indirectly without the consent in writing of the Commission.

7. It is further understood and agreed that in the event of the failure of the Lessees to pay the rental herein agreed upon the days and times herein specified or of any violation of this agreement by the Lessees or any of their employees, the Commission may forthwith terminate this agreement and the Lessees shall pay to the Commission any damage that may accrue from such violation of this agreement.

8. It is further understood and agreed that such wire, instruments and batteries shall at all times be and remain the property of the Commission, and shall be accessible to its employees and that nothing herein contained shall have or be construed as having the effect of vesting in the Lessees any right, title or interest to or in the same except in the manner and during the term and upon the conditions herein provided, and further that the Commission shall in no wise be responsible for errors or delays or for defaults or mishaps in messages which may be transmitted by the operators of the Lessees over the wire provided for herein.

9. This agreement shall be and continue in force until the 31st day of December, 1916, and thereafter until the expiration of thirty days written notice given by either party hereto to the other of its or their intention to terminate the same (unless sooner terminated by the Commission as provided in paragraph 7 hereof), save and except that the rental from and after said 31st day of December, 1916, shall be payable in advance in monthly instalments of $515.00 each instead of in quarterly instalments of $1,545 as hereinbefore provided.

10. This agreement shall not be assigned or transferred by the Lessees without the written consent of the Commission first had and obtained.

11. If during the currency of this agreement the Lessees shall require any additional connections which the Commission is willing to make the Lessees shall pay for each drop or extra office at the rate of $500 per annum, payable in advance in equal monthly instalments.

12. Where the word "wire" is used in this agreement it means telegraph circuit.

13. The agreement dated the first day of January, 1916, made between the parties hereto is hereby declared to be cancelled and at an end.

IN WITNESS WHEREOF the said Commission has caused these presents to be executed under its corporate seal and under the hands of its proper officers in that behalf, and the said Lessees have set their hands and seals the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

A. B. Odlum.

E. B. Thauburn.

Temiskaming and Northern Ontario Ry. Com'n.

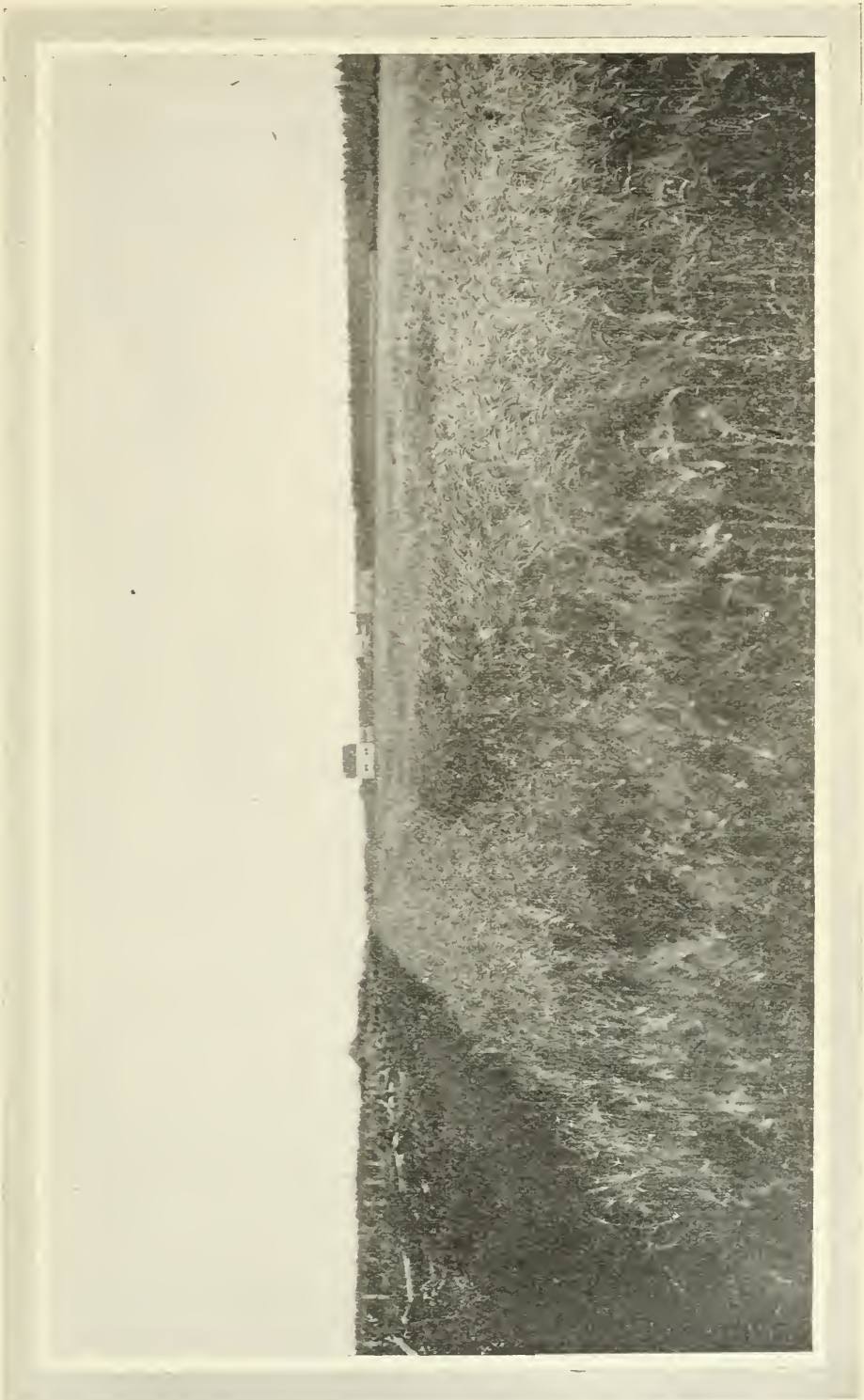
J. L. Englehart, (Seal.)
*Chairman.*

W. H. Maund,
*Secretary-Treasurer.*

Philip G. Kiely. (Seal.)

W. E. Smith. (Seal.)

Alfred A. Amos. (Seal.)



Crop of Barley; 35 bushels per acre. Farm of Mr. W. Mulverill, Armstrong Township.

THIS AGREEMENT made in duplicate this 31st day of October, A.D. 1916.

BETWEEN:

DOMINION WHEEL AND FOUNDRIES, LIMITED, hereinafter called the Contractor, —and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH that in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration the parties hereto have mutually agreed and do each agree with the other as follows:

1. The Contractor agrees to sell and deliver to the Commission as and when ordered all the cast iron car wheels required by the Commission for the period of one year commencing the first day of November, 1916, such cast iron car wheels to be constructed in strict compliance with the Master Car Builders' rules and regulations and to the complete satisfaction of the Chief Engineer and Superintendent of Maintenance of the Commission, and the Commission agrees to purchase and pay for the said cast iron car wheels at the rate or price of one dollar and eighty cents ($1.80) per hundred pounds.

2. The said cast iron car wheels shall be delivered to the Commission free on board the Commission's tracks at the Town of North Bay.

3. The Contractor further agrees to sell and deliver to the Commission as and when ordered all the gray iron castings required by the Commission during the said period of one year, such iron castings to be constructed to the complete satisfaction of the Chief Engineer of the Commission, and the Commission agrees to purchase and pay for such gray iron castings at the rate or price of two dollars and fifty cents ($2.50) per hundred pounds.

4. The said gray iron castings shall be delivered to the Commission free on board the Commission's tracks at the Town of North Bay.

5. In consideration of the premises the Contractor agrees to purchase and the Commission agrees to sell, for the period above mentioned, all the Commission's used cast iron car wheels, and the Contractor agrees to pay for such used cast iron car wheels at the rate or price of fifteen dollars and ninety cents ($15.90) per gross ton, such used cast iron car wheels to be delivered to the Contractor free on board the Commission's tracks at the Town of North Bay, and the Contractor further agrees to purchase and the Commission to sell all the Commission's cast scrap and malleable scrap iron at the rate or price of thirteen dollars and seventy--five cents ($13.75) per gross ton, such cast and malleable scrap iron to be delivered to the Contractor free on board the Commission's tracks at the Town of North Bay.

This agreement and everything herein contained shall enure to the benefit of and be binding upon the parties hereto, their successors and assigns respectively.

IN WITNESS WHEREOF the parties hereto have hereunto set their respective corporate seals under the hands of the proper officers in that behalf.

SIGNED, SEALED AND DELIVERED in the presence of:

G. S. GARDINER.

A. B. ODLUM.

DOMINION WHEEL AND FOUNDRIES, LIMITED.

F. J. NEALE, (Seal.)
*Secretary-Treasurer.*

J. A. KILPATRICK, *President.*

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.

J. L. ENGLEHART, (Seal.)
*Chairman.*

W. H. MAUND, *Secretary-Treasurer.*

MEMORANDUM OF AGREEMENT made this fifteenth day of September, one thousand nine hundred and fifteen.

BETWEEN:

THE GRAND TRUNK PACIFIC TELEGRAPH COMPANY, hereinafter called the Company

Of the First Part

—and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission

Of the Second Part.

1. WHEREAS the Commission own and operate a system of telegraph lines for the public as well as for its own business, and the Company propose to operate lines on its line of telegraph for similar purposes IT IS MUTUALLY AGREED between the Company and the Commission, as hereinafter set forth, that in consideration of the Commission acting as Agents for the Company at Cochrane, Ont.

2. The Company will put its wire or wires into the Commission's office at Cochrane and provide all necessary instruments for the same. The Commission will provide operator and messenger.

3. The Company will maintain its own lines and instruments and furnish all supplies in connection therewith.

4. The through telegraph rates shall be made up as follows:

Company's tolls plus Commission's and connecting lines tolls, as per published tariffs.

5. DIVISION OF RATES:

The Company will retain its rates as per tariff and pay to the Commission local rates plus connection lines rates as per tariffs, and in addition, the Company will pay to the Commission 20 per cent. of Company's tolls on all messages handled by Commission's Agent at Cochrane for messages to and from the Company's lines.

6. Each party shall be responsible to the other for any errors, delays, non-delivery, or any act or omission resulting in claims for damages that may occur on its lines in the case of messages received by the other for transmission over its lines, and each party shall be responsible for any delays, errors, or omissions in the case of joint business received by it for points on the lines of the other, which delays, errors or omissions have resulted before delivery to the other.

7. This agreement shall remain in force for a period of one year from its date and thereafter until terminated by three month's notice in writing from either party to the other, which notice may be either delivered or mailed, postage prepaid and registered, addressed to the Superintendent of Telegraphs of the Commission at North Bay, or Manager of Telegraphs of the Company at Montreal.

WITNESS the corporate seals of the parties hereto under the hands of their proper officers.

SIGNED, SEALED AND DELIVERED in the presence of:

E. B. Way.

Recommended:
H. Hulatt.

A. B. Odlum.

The Grand Trunk Pacific Telegraph Company.
E. J. Chamberlin,
*President.*
Henry Phillip,
*Secretary.*

Temiskaming and Northern Ontario Ry. Com'n.
In the presence of:
J. L. Englehart,
*Chairman.*
W. H. Maund,
*Secretary-Treasurer.*

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MEMORANDUM OF AGREEMENT made this 17th day of February in the year of our Lord, one thousand nine hundred and sixteen.

Between:

BUFFALO AND SUSQUEHANNA COAL AND COKE COMPANY of Buffalo, N.Y., hereinafter called the Contractors

—and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

1. Subject of the terms hereof the Contractors agree to sell to the Commission, and the Commission agrees to buy from the Contractors, one hundred thousand net tons three-quarter lump coal of Sagamore Mine at the price of two dollars and thirty-seven cents per net ton (two thousand pounds) on board cars, International Bridge, Black Rock, N.Y. Delivery as required up to May 1st, 1917, and subject to the provisions hereinafter stated.

2. The Contractors absolutely guarantee (*a*) that all coal to be delivered under this contract shall be suitable for the purposes of the railway of the Commission, and (*b*) shall on analysis, in manner hereinafter provided, prove to be at least equal to the following which is agreed to be the standard analysis:

| | |
|---|---|
| Moisture | 1.25 |
| Hydro Carbons | 32.75 |
| Fixed Carbons | 58.25 |
| Ash | 7.75 |
| | 100.00 |
| Sulphur | 1.65 |

3. Samples for purpose of analysis may be taken (so far as deemed necessary by the Commission) from each carload of coal on or at any time after the arrival thereof at North Bay, and may be so taken at any point on the railway of the Commission, and such sample consist of not less than twenty-five pounds of lump and slack in the same relative proportion as appears in the shipment, to be taken from carload by the Superintendent, the Master Mechanic, or the Storekeeper of the Commission, and any sample so taken shall be conclusively presumed to be a fair sample for purposes of analysis of such carload and the certificate of Milton L. Hersey, analyst and chemist of Montreal, as to whether such sample answers the aforesaid guarantee (*b*) of the Contractors shall be absolutely final, binding and conclusive upon both parties as to whether the carload from which such sample has been taken answers such guarantee.

4. In case of analysis as aforesaid if any carload of coal delivered under this contract shall be found below standard quality as shown by analyst's certificate as aforesaid, the Commission shall be at liberty to reject such carload or the portion of it not used, notwithstanding that delivery of same may theretofore have been taken; notwithstanding that the necessary entry for passing same through the customs may have been made, and notwithstanding that same may have been unloaded or stored or wholly or partly paid for or otherwise dealt with, and thereupon the same shall be at the risk of and shall be deemed for all purposes to be the property of the Contractors, who shall forthwith remove and take delivery of same and repay to the Commission all moneys which the Commission may have paid in respect thereof, whether for freight, duties, cost of analysis, storage, unloading or any other charges or expenses, and if the Commission shall theretofore have paid the price or any part thereof, the Contractor shall forthwith repay the same. IT BEING HOWEVER EXPRESSLY AGREED THAT the aforesaid right of the Commission to reject any coal so delivered shall be in addition to all its other legal rights and remedies in the premises and not in the substitution for same or any of them.

5. Should coal at any time delivered under this Contract whether analyzed as aforesaid or not and irrespective of the result of such analysis prove in the opinion of the Master Mechanic or Superintendent of the Commission unsuitable for the purposes of the railway of the Commission, the Commission may at its option by notice in writing to the Contractors cancel and annul this contract as to any coal not theretofore shipped without prejudice to the liability of the Contractors for any breaches of this contract.

6. Beginning with the first day of May, 1916, there shall be shipped by the Contractors from the mines, properly consigned to the Commission at North Bay Junction, and with all freight and other charges prepaid to International Bridge, Black Rock, N.Y., or at mines at the option of the Commission approximately seven cars per day, subject to the increase or diminution from time to time of the daily shipments as shall be required by written notice, by letter or telegram from the Storekeeper of the Commission at North Bay to the Contractors at Buffalo, such notice to be duly sent from North Bay at least one week prior to the week to the shipments of which such notice shall apply. Coal will be sold at initial manifest weights which shall be binding and no claim shall be allowed for short weights except in the case of unusual loss by reason of defective cars. Provided and required that twenty-five per cent. of daily shipments of said coal be delivered in flat bottom cars.

7. The Commission shall further have the right at any time to cancel its purchase hereunder to the extent of not more than ten per cent. of the quantity of coal covered by this contract, in which case such ten per cent. or less proportion as the case may be, shall be taken from the last deliveries herein agreed upon.

8. If, during the continuance of this contract, the Commission is unable to make use of the said coal by reason of strike, destruction or disability of its railway or any part thereof, the Commission shall have the right during the continuance of such disability at its option to discontinue taking coal in quantities herein specified.

It is also understood that should Contractors encounter strikes, accidents, shut-downs at the mines, from reasons beyond their control, they shall not be expected to deliver on this contract during the period of suspension.

9. At the time of each shipment the Contractors shall send to the Storekeeper of the Commission at North Bay five correct copies of invoices of the coal covered by such consignment charges at the price of one dollar and twenty-seven cents per ton "being the purchase price for said coal at the mines less freight charges of $1.10 per ton to International Bridge, Black Rock." two of which copies shall be duly certified as required by the Canadian Customs Law.

10. Payments shall be made by the Commission to the Contractors in Toronto funds, for all coal delivered to the Commission at North Bay in any one month, on or before the 20th day of the following month.

11. This contract shall inure to the benefit of and be binding upon the successors and assigns of the parties respectively.

AS WITNESS the corporate seals of the said parties under the hands of the proper officers in that behalf.

WITNESS:

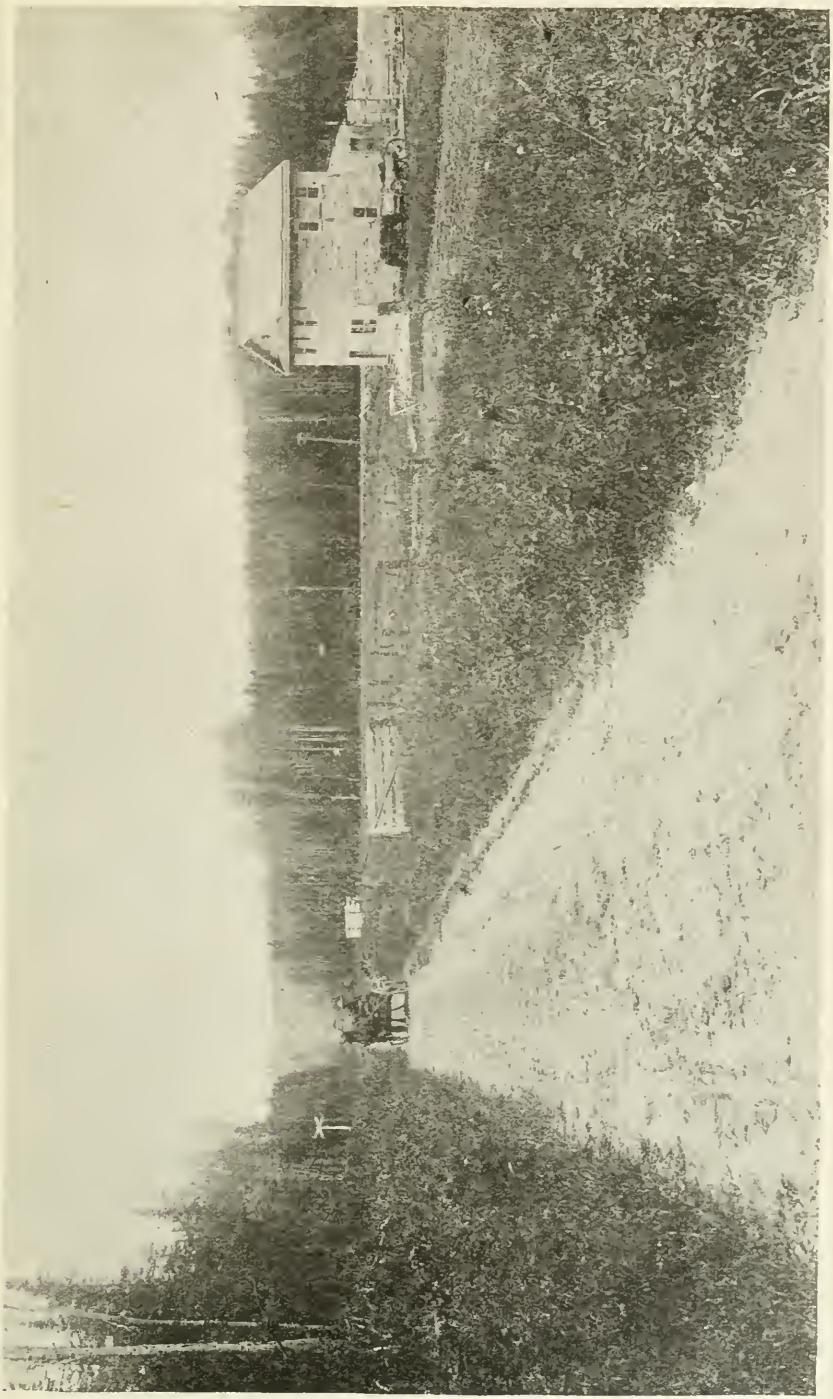
M. W. DRULLARD.

A. B. ODLUM.

W. A. GRAHAM,
*P. A. and S. K.*

BUFFALO AND SUSQUEHANNA COAL AND COKE CO.
J. W. TROUNCE,
*General Sales Agent.*

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART,
*Chairman.*
W. H. MAUND,
*Secretary-Treasurer.*



Boundary line between Chamberlain and Pacaud Townships, looking west, showing Farm of Mr. Harry Bedford, Lot 1, south half, Con. 1, Pacaud.

MEMORANDUM OF AGREEMENT made this 25th day of February, in the year of our Lord, one thousand nine hundred and sixteen.

BETWEEN:

THE ALGOMA STEEL CORPORATION, LIMITED, hereinafter called the Contractor, —and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH:

1. The Contractor agrees to furnish and deliver to the Commission free of all charges on cars at North Bay, Ontario, as hereinafter specified, twelve hundred and seventy-five gross tons open hearth steel rails, A.R.A. (90) ninety pounds A. section, in strict compliance with American Railway Association's standard specifications for carbon steel rails as found in 1915 specifications attached, and forming part of this agreement, boring for said rails to be in compliance with attached blue print, showing boring of T. & N. O. Ry. standard angle-bar, and of date February 28th, 1916, for the price of thirty-six dollars per gross ton of 2,240 pounds, f.o.b. cars North Bay, delivery to be made between the first and fifteenth days of September, 1916, time being agreed to be material and the essence of this contract.

2. In the event of stoppage or partial stoppage of the works of the Contractor, of shipments being delayed through strikes, accidents, breakage of machinery, or other cause beyond the Contractor's control (of which the Commission shall be promptly notified), or in case any shipment or any part thereof shall be lost in transit, the Contractor shall be entitled to such additional time in respect of the whole or any part of such delivery as the Chief Engineer of the Commission for the time being shall decide, and certify in writing to be fair and reasonable, having reference to the character and duration of such stoppage, delay, or loss, and such Engineer shall be the sole and final judge as to the additional time to be allowed and as to what part of such delivery the same shall extend to, and his decision in every such case shall be absolutely final and binding upon both parties. The last preceding clause of these presents shall be construed as far as relates to any portion of such deliveries or any of them affected by such extension of time as if the time fixed by the Engineer were time fixed in such clause.

3. The Contractor shall give written notice to the Commission at its office in Toronto of the commencement of rolling at least eight days in advance of such commencement, and shall similarly give written notice to the Commission at its office in Toronto of the resuming of the work after its temporary suspension at least two clear days before such resuming.

4. The written certificate of the Inspector of the Commission provided for by said specifications certifying that the rails have been manufactured to his satisfaction in accordance with this contract, and the said specifications shall be a condition precedent to the right of the Contractor to receive and be paid the price herein agreed to be paid for the same.

5. In case default shall be made by the Contractor in delivery of any of the said rails in accordance with the terms of this contract and the continuance of such default for thirty days, the Commission may, at its option, cancel this contract, but the Contractor shall nevertheless remain liable for all loss which may be suffered by the Commission by reason of the non-completion by the Contractor of this contract, PROVIDED, HOWEVER, that credit shall be given to the Con-

tractor notwithstanding such cancellation of the price of all rails which shall have been delivered by the Contractor in accordance with this contract and said specifications.

6. The cost of inspection provided for by the specifications shall be borne by the Commission.

7. The Commission in consideration of the premises agrees to pay in Toronto funds for each shipment of said rails upon delivery thereof on the tracks of the Commission at North Bay on presentation of invoices and certificate of the Inspector of the Commission at the Commission's office in Toronto.

IN WITNESS WHEREOF the said parties have caused these presents to be executed under their respective corporate seals and the hands of the proper officers in that behalf.

WITNESS:

ALGOMA STEEL CORPORATION, LIMITED.
W. C. FRANZ,
*Vice-President.*
JAMES HEWSON,
*Assistant Secretary.*

A. B. PRATT.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART,
*Chairman.*
W. H. MAUND,
*Secretary-Treasurer.*

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MEMORANDUM OF AGREEMENT made this 19th day of May, in the year of our Lord, one thousand nine hundred and sixteen.

BETWEEN:

THE ALGOMA STEEL CORPORATION, LIMITED, hereinafter called the Contractor

—and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH:

1. The Contractor agrees to furnish and deliver to the Commission free of all charges on cars at North Bay, Ontario, as hereinafter specified, two thousand gross tons open hearth steel rails, A.R.A. (90) ninety pound A. section, in strict compliance with American Railway Association's standard specifications for carbon steel rails as found in 1915 specifications attached, and forming part of this agreement, boring for said rails to be in compliance with attached blue print, showing boring of T. & N. O. Ry. standard angle-bar, and of date February 28th, 1916, for

the price of thirty-seven dollars and fifty cents per gross ton of 2,240 lbs., f.o.b. cars North Bay, delivery to be made between the first and fifteenth day of May, 1917, time being agreed to be material and the essence of this contract.

2. In the event of stoppage or partial stoppage of the works of the Contractor, of shipments being delayed through strikes, accidents, breakage of machinery, or other cause beyond the Contractor's control (of which the Commission shall be promptly notified), or in case any shipment or any part thereof shall be lost in transit, the Contractor shall be entitled to such additional time in respect of the whole or any part of such delivery as the Chief Engineer of the Commission for the time being shall decide, and certify in writing to be fair and reasonable having reference to the character and duration of such stoppage, delay, or loss, and such Engineer shall be the sole and final judge as to the additional time to be allowed and as to what part of such delivery the same shall extend to, and his decision in every such case shall be absolutely final and binding upon both parties. The last preceding clause of these presents shall be construed so far as relates to any portion of such deliveries or any of them affected by such extension of time as if the time fixed by the Engineer were time fixed in such clause.

3. The Contractor shall give written notice to the Commission at its office in Toronto of the commencement of rolling at least eight days in advance of such commencement, and shall similarly give written notice to the Commission at its office in Toronto of the resuming of the work after its temporary suspension at least two clear days before such resuming.

4. The written certificate of the Inspector of the Commission provided for by said specifications certifying that the rails have been manufactured to his satisfaction in accordance with this contract, and the said specifications shall be a condition precedent to the right of the Contractor to receive and be paid the price herein agreed to be paid for the same.

5. In case default shall be made by the Contractor in delivery of any of the said rails in accordance with the terms of this contract and the continuance of such default for thirty days, the Commission may, at its option, cancel this contract, but the Contractor shall nevertheless remain liable for all loss which may be suffered by the Commission by reason of the non-completion by the Contractor of this contract, PROVIDED, HOWEVER, that credit shall be given to the Contractor notwithstanding such cancellation for the price of all rails which shall have been delivered by the Contractor in accordance with this contract and said specifications.

6. The cost of inspection provided for by the specifications shall be borne by the Commission.

7. The Commission in consideration of the premises agrees to pay in Toronto funds for each shipment of said rails upon delivery thereof on the tracks of the Commission at North Bay on presentation of invoices and certificate of the Inspector of the Commission at the Commission's office in Toronto.

IN WITNESS WHEREOF the said parties have caused these presents to be executed under their respective corporate seals and the hands of the proper officers in that behalf.

WITNESS:

HARRY A. WORKMAN.

ALGOMA STEEL CORPORATION, LIMITED.
W. C. FRANZ,
*Vice-President.*
JAMES HEWSON,
*Assistant Secretary.*

A. B. ODLUM.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART,
*Chairman.*
W. H. MAUND,
*Secretary-Treasurer.*

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## MONTREAL, PROVINCE QUEBEC, CANADA, APRIL 17th, 1916.

*To the Commissioners of the Temiskaming and Northern Ontario Railway.*

GENTLEMEN,—The Dominion Brake Shoe Company, Limited (hereinafter called the "Brake Shoe Company"), proposes to furnish to the Temiskaming and Northern Ontario Railway Commission (hereinafter called the "Purchaser"), and the Purchaser agrees to purchase from the Brake Shoe Company all brake shoes used by it, and by any other lines of railroad it may purchase, control or operate, for locomotive and car equipment, including any new equipment that may be built or ordered, upon the following terms:—

TYPES AND PRICES—

| | Per net ton. |
|---|---|
| *Locomotive Driver Brake shoes*: | |
| "Perfecto" type, with crucible steel inserts and full plate steel back... | $66 00 |
| *Brake Shoes for Locomotive Tender and Passenger Car Equipment*: | |
| "Diamond S" type, flanged with full plate steel back and wrought lug. | 61 00 |
| "Diamond S" type, unflanged with full plate steel back and wrought lug | 56 00 |
| *Freight Car Brake Shoes*: | |
| "Diamond T" type, unflanged with full plate steel back and wrought lug | 40 00 |

DELIVERY: F.O.B. cars at St. Thomas, Ontario.

PAYMENT: Net cash thirty (30) days from date of invoice.

STOCK OF BRAKE SHOES: To insure prompt deliveries, the Brake Shoe Company will carry in stock such a quantity of brake shoes, of each type and pattern as the purchaser may request, which, upon the termination of this agreement, the purchaser agrees to immediately purchase from the Brake Shoe Company at the above-named prices.

INSPECTION: The Brake Shoe Company will, upon request of, and without charge to the purchaser, furnish an experienced inspector to assist and instruct its employees in the economical use of brake shoes and in the inspection of same in stock and in scrap. This inspector shall make such reports to the purchaser as it may require; duplicates of which will be furnished to the Brake Shoe Company.

TERM OF AGREEMENT: The term of this agreement is three (3) years from date of its acceptance and it shall continue thereafted from year to year unless terminated by either party by sixty (60) days' written notice to the other prior to its expiration, or prior to the expiration of any succeeding yearly period.

An acceptance of this proposition shall constitute an agreement between the Purchaser and the Brake Shoe Company, their successors and assigns, in accordance with the terms and conditions herein set forth.

Accepted this 1st day of May, 1916, Temiskaming and Northern Ontario Railway Commission.

WITNESS:

A. B. PRATT.

DOMINION BRAKE SHOE COMPANY, LIMITED. THE HOLDEN COMPANY, LIMITED, AGENTS.
D. M. BROWN.
TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART,
*Chairman.*
W. H. MAUND,
*Secretary-Treasurer.*

## Rates of Pay and Rules Governing Service of Machinists in Motive Power Department.

*Effective May 1st, 1916.*

### GENERAL RULES.

ARTICLE 1.

*Duration*:

The rules and rates hereafter specified will supersede all others in effect, and will remain in force until April 30th, 1917, and from year to year thereafter, unless 30 days' notice is given prior to that date in each respective year of a desire to change.

ARTICLE 2.

*Hours*:

(*a*) Work hours for shop work are as follows:

For day work, excepting Saturdays and Sundays, 7 a.m. to noon, and 1 p.m. to 5 p.m.; Saturdays 7 a.m. to noon.

For night work, 9½ hours between 7 p.m. and 6 a.m. on the day following. When shops are on full time, men will be worked 10½ hours each night, five nights a week.

(*b*) Work hours for running work in locomotive department are as follows:

For day work, excepting Saturdays and Sundays, 7 a.m. to noon, and 1 p.m. to 6 p.m.; Saturdays, 7 a.m. to noon.

For night work, excepting Sundays, 7 p.m. to 6 a.m. on the day following, one-half hour to be allowed for meals between 11 p.m. and 2 a.m.

(*c*) The assignment of men to running work is determined by their service being required in connection with train service and will be arranged by the Railway. They will be permanently employed on one class or the other and will not be transferred for periods of less than one week.

NOTE.—This clause is not intended to change existing conditions except as justified by increasing business.

(*d*) So far as consistent with the proper maintenance of the train service, men assigned to running work will be allowed alternate Saturday afternoons and either Sunday or one other day in seven.

ARTICLE 3.

*Overtime*:

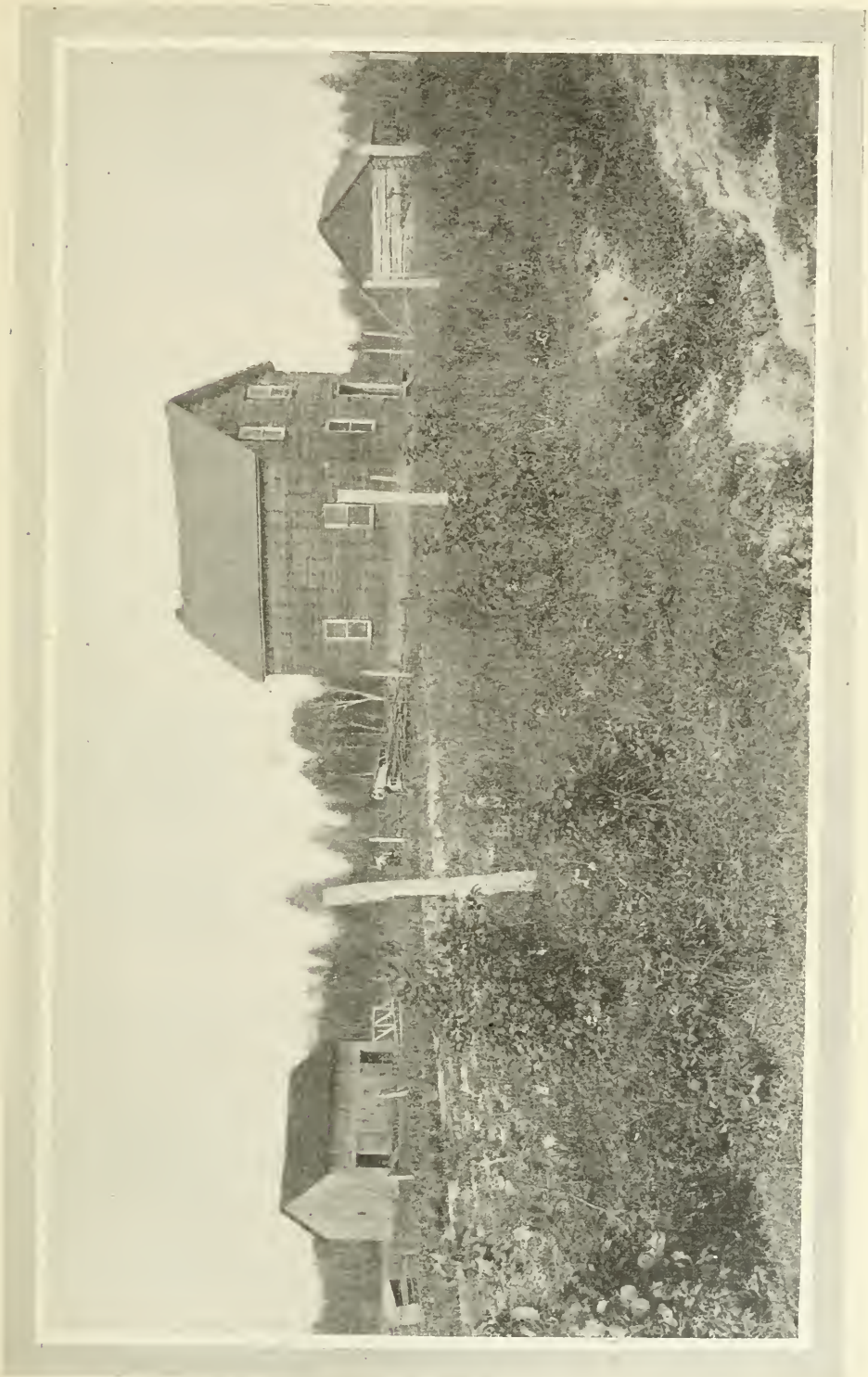
(*a*) Overtime at the rate of time and a half will be paid for as follows:

For all time worked outside of work hours.

For all time worked between 7 a.m. on the following Dominion public holidays, and 7 a.m. on the following days: New Year's Day, Good Friday, Victoria Day, King's Birthday, Dominion Day, Civic Holiday, Labor Day, Thanksgiving Day and Christmas Day.

Should any of the above-mentioned holidays fall on Sunday, the day observed by the Provincial or Federal Government will be observed.

As far as possible, overtime will be distributed equally among the machinists and



Farm of Mr. Hughey Anderson. South half Lot 1, Con. 3, Chamberlain Township.

they will not be laid off during working hours to equalize their time on account of working overtime.

(*b*) When men permanently on day or night shift are transferred from one to the other and are required to work on two successive shifts, the second shift will be considered as overtime.

(*c*) Men assigned to shop work if called out to work after work hours will receive in all not less than 4½ hours straight time.

Men assigned to running work, if called out to work after work hours will receive in all not less than one and one-half hours straight time if called out within three hours after working hours; if called out after three hours after work hours they will receive not less than five hours straight time.

Men who, while working, are told to continue to work after work hours, or who are told to return to work overtime, commencing not over one hour after work hours, will not be considered as having been called out.

(*d*) Machinists shall not be expected to work overtime more than one night per week, except in emergencies.

ARTICLE 4.

*Travelling*:

(*a*) Men sent from their regular place of employment to work temporarily, or returning thereto, will receive work time for the first eight hours and straight time for the remaining time while travelling or waiting trains, until arrival at destination. Work hours will govern while working, and reasonable expenses will be allowed.

NOTE.—Arrangements will be made that men should, as far as possible, be notified in advance.

NOTE.—Arrangements will be made to supply men with food, when sent out to work at points where it cannot be obtained.

(*d*) Men will be paid straight time when travelling to and from wrecks from the time called for (except between midnight and midnight on Sundays and holidays specified in article 3, clause A, when time and one-half will be paid), and time and one-half while working at wrecks, and to a man left in charge of a wrecking gang or wrecked engine. No time will be allowed when laid up for rest. Straight time will be allowed while waiting for the movement of wrecking trains.

ARTICLE 5.

*Reduction*:

(*a*) Before any general reduction is made in men who have been engaged for six months or over, shop working hours will be reduced to eight hours per day, five days per week. If further reduction is necessary, men having others dependent upon them for support will be given preference of employment, seniority and efficiency governing.

(*b*) When working hours have been shortened as above, force will not be increased until full working hours are restored. Men laid off on account of reduction of force, if competent and available, will, when force is increased be given preference over new men.

(*c*) Men who are discharged or resigned will be given certificates as quickly as possible, stating term of service, capacity in which employed and if discharged, the reason.

(*d*) Men leaving the service will receive their wages in full within two working days.

NOTE.—Men underpaid on account of errors, will, on application to their foreman, have their case referred to their superior officers for decision as to whether immediate payment can be allowed.

ARTICLE 6.

*Committees*:

(*a*) Employees having grievances either specific or of a general nature, may present their case to the proper officer. If investigation is desired, the aggrieved party, another employee representing him, or a committee of employees representing him, may, during working hours arrange with his foreman for same, investigation to be held within forty-eight hours after such application, and in case a satisfactory adjustment cannot be made, the case may be referred to the next higher officer of the department until the commission is approached. If, after investigation, the employee is found to be unjustly dealt with, he will be reinstated and paid for all time lost. In order that the committee may be properly constituted and entitled to formal recognition, it must have applied to adjust the case with the foreman before applying to the higher officer who will not unduly delay his investigation.

(*b*) Applicants for employment as machinists for the Commission shall only be expected to file the address of relatives, and prove that they are of good moral character.

(c) Leave of absence and free transportation to points on the Temiskaming and Northern Ontario Railway will be granted to members of committees properly constituted for the adjustment of matters in dispute with the Railway after receipt of written application to the proper officer.

NOTE.—Members of committees will not be discriminated against on account of serving on committees.

(d) Men will be subject to the general rules of the Commission with regard to leave of absence and free or reduced transportation.

ARTICLE 7.

*Seniority*:

(a) When a man accepts transfer to another station he thereby loses his seniority at the station he leaves, but the seniority rights at the station he goes to date from the time he entered the service.

(b) Promotion or advancement to more desirable work will be based on seniority and efficiency.

ARTICLE 8.

*Classification*:

(a) Machinists, who, while paid by the hour, permanently direct and are responsible for the work of others are designated as leading hands.

(b) Men will not be employed as improvers and helpers will not be advanced to the detriment of machinists or apprentices unless committee has been unable to furnish men after one week's notification. Helpers or improvers advanced to machinist's work will be paid the schedule rate of pay.

(c) Machinists being hired by this Railway shall be started at the standard rate of pay and if retained in the service of the Commission thirty days, their ability as a machinist shall have been established.

ARTICLE 9.

*Apprentices*:

(a) Machinist's apprentices when engaged must be between the ages of fifteen and eighteen years and will serve five years. Their number will be limited to one for the shop and one for every four tradesmen engaged therein.

(b) Apprentices when engaged must be able to read and write and know the first four rules of arithmetic.

(c) Apprentices who have served twelve months or less showing no aptitude to acquire the trade may be dismissed or transferred.

NOTE.—The Commission will furnish all opportunity possible for the apprentice to secure a complete knowledge of the trade during his apprenticeship. So far as possible, he shall serve three years on the different machines and special jobs, air brake work included, not serving more than six months on any one machine or any special job, and two years on the floor, the last six months in the roundhouse.

(d) Apprentices will not be worked overtime or at night unless necessary and only under the supervision of a machinist.

(e) Apprentices if retained in the employ of the Commission after finishing their apprenticeship shall receive machinist pay.

ARTICLE 10.

*Machinists*:

(a) Men who have served an apprenticeship or had four years' varied experience and are competent to operate lathes, planing, slotting, milling, shaping and tire boring machines or other machine tools requiring skilled operation, and are capable of repairing and assembling the various parts of locomotives or any kind of machinery whatsoever, will be designated as machinists.

NOTE.—The fitting, adjusting, shaping, boring, turning, finishing the disassembling of metal of locomotives or other machines, dry and steam pipe work, and brake riggings, shall be considered as machinist work; all laying off, building and mechanical work on repairs of engine trucks are also included.

(b) Boys serving an apprenticeship to learn the trade are designated as machinists' apprentices.

ARTICLE 11.

*Working Conditions*:

So far as possible shop and roundhouse will be kept warm and comfortable.

Any part of engine requiring repairs will be cleaned on request.

The sanitary arrangements in shops and roundhouses will be given regular attention, such as wash basins, closets, drainage, plentiful supply of good drinking water, smoke jacks and leaky steam pipes.

When it can be avoided, men will not be required to work out of doors in inclement weather, nor under engines until same have been placed over pit.

Machinists wishing to be absent two days or more from the service must obtain leave of absence from the foreman.

All machinists and apprentices must be treated with due respect and shown gentlemanly courtesy. When found necessary to interview any machinist he must be called into the office and interview as privately as possible.

ARTICLE 12.

*Rates of Pay—Machinists*:

(*a*) The minimum rate of pay for machinists will be forty cents per hour.

(*b*) Charge hands will receive not less than three cents above the highest minimum rate paid the men under their charge.

ARTICLE 13.

*Rates of Pay—Apprentices*:

(*a*) For the apprentices serving five years, rates of pay will be as follows:—

| | |
|---|---|
| First year | 13 cents. |
| Second year | 15 cents. |
| Third year | 16 cents. |
| Fourth year | 19 cents. |
| Fifth year | 24 cents. |

Witness:

R. E. ELLWOOD.

A. B. ODLUM.

Signed for Machinists:
W. C. CRIPPS.
GEO. HAWKINS.
F. T. CADE.

Signed for Commission:
J. L. ENGLEHART,
*Chairman.*
W. H. MAUND,
*Secretary-Treasurer.*
S. B. CLEMENT,
*C. E. & S. of M.*
F. R. ROSS,
*Master Mechanic.*

## Proposed Rates of Pay and Rules Governing Service in Car Department.

### GENERAL RULES.

ARTICLE 1.

*Duration:*

The rules and rates hereinafter specified will supersede all others in effect and will reman in force until June 30th, 1917, and from year to year thereafter, unless 30 days' notice is given prior to that date, in each respective year of a desire to change.

ARTICLE 2.

(*a*) Work hours for shop work are as follows: for day work, excepting Saturdays and Sundays, 7 a.m. to noon, and 1 p.m. to 6 p.m., Saturdays, 7 a.m. to noon. For night work, 9½ hours between 7 p.m. to 6 a.m. on the following day. When shops are on full time men will be worked 10½ hours each night, five nights a week.

(*b*) Work hours for running work in Car Department are as follows:

For day work excepting Sundays, ten hours out of eleven consecutive hours, between 7 a.m. and 7 p.m., 1 hour for meals between noon and 2 p.m.

For night work, excepting Sundays, eleven consecutive hours between 7 p.m. and 7 a.m. on the day following half hours for meals to be allowed between 11 p.m. and 2 a.m.

(*c*) The assignment of men to running work is determined by their service being required in connection with train service, and will be arranged by the railway. They

will be permanently employed on one class or the other and will not be transferred for periods of less than one week. This does not include men relieving.

NOTE.—This clause is not intended to change existing conditions except as justified by increasing business.

(*d*) So far as consistent with the proper maintenance of train service, men assigned to running work will be allowed alternate Saturday afternoons and either Sunday or one other day in seven.

(*e*) When working hours are reduced for any portion of shops, such shortened hours will constitute work hours for that portion of the shop, 24 hours' notice will be bulletined of any such change. At all other points work hours will be shortened as deemed advisable by the railway without affecting the work hours as defined above.

NOTE.—So far as possible, full time worked will be divided between men employed, and they will be notified in advance.

(*f*) Men with duties of Car Inspectors at points where only one carman is employed will be allowed 330 hours per month, without overtime. This does not apply to men employed at outside points on work trains.

ARTICLE 3.

*Overtime*:

(*a*) Overtime at the rate of time and a half will be paid for as follows:

For all time worked outside of work hours.

For all time worked between 7 a.m. on the following Dominion public holidays and 7 a.m. on the following days:

New Year's Day, Good Friday, Victoria Day, King's Birthday, Dominion Day, Civic Holiday, Labour Day, Thanksgiving Day and Christmas Day.

Should any of the above-mentioned holidays fall on Sunday, the day observed by the Federal or Provincial Government will be observed.

(*b*) When men permanently on day or night shift are transferred from one to the other and are required to work on two successive shifts, the second shift will be considered as overtime.

(*c*) men assigned to shop work, if called out to work after work hours, will receive in all not less than four and a half hours' straight time.

Men assigned to running work, if called out to work after work hours will receive in all not less that one and a half hours' straight time, if called out within three hours after work hours; if called out after three hours after work hours they will receive not less than five hours' straight time.

Men who, while working, are told to continue work after work hours, or who are told to return to work overtime commencing not over one hour after work hours, will not be considered as having been called out.

ARTICLE 4.

(*a*) Men sent from their regular place of employment to work temporarily, or returning thereto, will receive work time for the first eight hours' and straight time for the remaining time while travelling or waiting trains, until arrival at destination. Work hours will govern while working and reasonable expenses will be allowed.

Arrangements will be made that men should as far as possible, be notified in advance.

(*b*) Men will be paid straight time when travelling to and from wreck from the time called for (except between midnight and midnight on Sundays and holidays specified in article 3, clause A, when time and one-half will be paid) and time and a half while working at wrecks, and to a man left in charge of a wrecking gang or wrecked engine. No time will be allowed while laid up for rest. Straight time will be allowed while waiting for movement of wrecking trains.

ARTICLE 5.

*Reduction*:

(*a*) Before any general reduction is made in men who have been engaged for six months or over, shop working hours will be reduced to nine hours per day, five days per week. If further reduction is necessary, men having others dependent on them for support will be given preference of employment, seniority and efficiency governing.

(*b*) When working hours have been shortened, as above, force will not be increased until full working hours are restored. Men laid off on account of reduction of force, if competent and available, will, when force is increased, be given preference over new men.

(*c*) Men who are discharged or resign will be given certificate as quickly as possible, stating term of service, capacity in which employed and if discharged, the reason.

(*d*) Men leaving the service will receive their wages in full within two working days.

NOTE.—Men underpaid on account of errors, will on application to their foremen, have their case referred to their Superior Officer for decision as to whether immediate payment can be allowed.

ARTICLE 6.

*Committee*:

(*a*) Employees having grievances either specific or of a general nature, may present their case to their proper officer. If investigation is desired, the aggrieved party, another employee representing him, or a committee of employees, may, during working hours, arrange with his foreman, for same, investigation to be held within forty-eight hours after such application, and in case a satisfactory adjustment cannot be made, the case may be referred to the next higher officer of the Department, until the Commission is approached. If, after investigation, the employee is found to be unjustly dealt with, he will be paid for all time lost. In order that the Committee may be properly constituted and entitled to formal recognition, it must have applied to adjust the case with the foreman, before applying to the higher officer.

(*b*) For men discharged within thirty days of engagement, on account of past record, with the railway, Section A above will not apply.

(*c*) Leave of absence and free transportation to points on the Temiskaming & Northern Ontario Railway will be granted to members of committees properly constituted for the adjustment of matters in dispute with the railway after receipt of written application to the proper officer.

(*d*) Men will be subjected to the general rules of the Commission with regard to leave of absence, and free or reduced transportation.

ARTICLE 7.

*Seniority*:

(*a*) When a man accepts transfer to another station, he thereby loses his seniority rights at the station he leaves, but the seniority rights at the station he goes to date from the time he entered the service.

ARTICLE 8.

*Classification*:

(*a*) Men who while paid by the hour, permanently direct and are responsible for the work of others, are designated as leading hands.

(*b*) Promotion will be governed by efficiency and seniority.

NOTE.—So far as possible vacancies occurring will be bulletined for forty-eight hours to afford men opportunity to apply if they desire.

ARTICLE 9.

*Carmen*:

(*a*) Car repairers required to furnish and regularly use carpenters' tools will be classed as freight car carpenters.

Carmen with duties of Car Inspectors, on work trains, will be classed as Inspectors.

Carpenters on coach, bench and cab work, will be classed as coach carpenters.

Carpenters on truck, tender, pilot and coach platform work will be classed as general carpenters.

(*b*) Carmen who have worked overtime will not be required to lay off to equalize their time to straight time. Overtime will, as far as possible, be equalized between qualified men.

(*c*) Unless agreed otherwise, carmen on running staff working night and day relays, will work alternate weeks day and night.

(*d*) So far as possible, two men will be sent out on the road when work requires their services.

(*e*) When carmen are sent from home stations on such notice as to prevent them from obtaining funds to defray living expenses, the railway will provide them with meals, or means for obtaining same, and when possible, sleeping accommodation.

(*f*) When consistent with good service and provided the railway is not put to additional expense thereby, free transportation will be given the carmen to enable them to get to their places of residences at week end.

ARTICLE 10.

*Pipefitters*:

(*a*) Men who have served four years at the trade, and are capable of making and fitting up engine, car or general pipe work, or plumbing will be designated as pipefitters or plumbers.

ARTICLE 11.

*Carmen*:

(*a*) The rates of pay will be as follows:

| | Shop. | Running. |
|---|---|---|
| Pattern Maker | $0.39 | |
| Carpenters—Coach | .36½ | $0.35½ |
| " Locomotive Cab | .35 | |
| " General | .33½ | .31½ |
| " Freight Car | .31½ | |
| Wood Machinist | .36½ | |
| " " Helper | .25½ | |
| Pipe Fitters | .35½ | |
| Car Inspectors | | .29 |
| Car Repairers | .27½ | .26½ |
| Air Brake Cleaners | .28½ | .27 |
| Triple Tester | .32½ | |
| Coach Truck Repairers | .27½ | |
| Car Cleaners—Sleeping and Diners | | .25½ |
| Car Cleaners, others | | .24½ |
| Painters—Decorator and Letterers | .34½ | .33½ |
| " First Class Brush Hands and Varnishers | .32½ | .31½ |
| " First Class Helpers | .27½ | .26½ |
| " General Helpers | .25 | .24 |

Car repairers promoted to car carpenters will receive two cents less than minimum rate of pay for the first six months.

(*b*) Above rates of pay apply to permanent carmen or those who have been in the service of the car department continually for six months or more, or who have had six months' cumulative service during the year immediately preceding. Other carmen may be employed at a rate of two cents below those shown.

(*c*) Leading hands will receive not less than three cents above the highest minimum rate paid the men under their charge.

Signed for Car Department Employees
H. J. TIPLER, *Past President.*
L. SHEA, *President.*
R. STENNING, *Vice-President.*
(Seal)

T. J. G.

Signed for Commission:
T. R. ROSS, *Master Mechanic.*
S. B. CLEMENT, *C. E. & S. of M.*

TEMISKAMING & NORTHERN ONTARIO RAILWAY COMMISSION.
J. L. ENGLEHART, *Chairman.*
W. H. MAUND, *Sec.-Treasurer.*

## RE PURCHASE SIX MIKADO TYPE LOCOMOTIVES.

Tenders received as follows:

| | |
|---|---|
| Canadian Locomotive Co., Kingston | $33,495 00 each |
| Montreal Locomotive Works, Montreal | 39,334 50 each |
| Lima Locomotive Corporation, Lima, Ohio | 38,796 88 each |
| Baldwin Locomotive Works, Philadelphia, Pa. | 40,400 00 each |

Contract awarded Canadian Locomotive Co., Ltd., Kingston, lowest tenderer.

Wm. Agar's Apiary near Thornloe.

Fall Wheat which yielded thirty bushels to the acre. Walker Tp., Con. 2, Lot 11.

ARTICLES OF AGREEMENT made this 11th day of May, in the year of our Lord one thousand nine hundred and sixteen.

BETWEEN:

CANADIAN LOCOMOTIVE COMPANY, LIMITED, hereinafter called the Contractor.

—and—

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH:

1. In this contract the words "Mechanical Engineer" shall mean the Mechanical Engineer for the time being of the Commission, and the word "Inspector" shall mean the Inspector for the time being appointed by the Mechanical Engineer to represent and act for the Commission in the supervision and in the inspection and certification of the locomotive engines hereinafter referred to.

2. The Contractor will supply and provide all and every kind of labor, work, materials, articles and things whatsoever necessary for the due construction and completion, and will well and duly build and complete in a perfect and workmanlike manner six Mikado type locomotive engines, with all necessary appliances, for use on the line of railway of the Commission, in strict compliance with the specifications and plans hereunto annexed and to the complete satisfaction of the Mechanical Engineer, and will deliver the same complete to the Commission f.o.b. on the Commission's tracks at North Bay, Ontario, as follows: Three of said locomotive engines on or before the 7th day of September, 1916, and the balance on or before the 14th day of September, 1916, time being agreed to be material and of the essence of this contract, and in default of such delivery within the times aforesaid the Contractor will pay to the Commission by way of liquidated damages the sum of ten dollars ($10.00) in respect of each of the said locomotive engines for each day which may elapse after the dates fixed for delivery of said locomotive engines respectively, which sum the Commission is authorized to deduct from the price hereinafter mentioned: PROVIDED, HOWEVER, that such damages shall not be recoverable in respect of any delays caused wholly by strikes, fires, accidents or other unavoidable occurrences wholly beyond the control of the Contractor.

3. The Contractor shall submit all drawings and detail plans for the approval of the Mechanical Engineer of the Commission before material is ordered or work commenced.

4. The Mechanical Engineer shall be the sole judge of all work and material done and supplied under this contract, and his decision on all questions in dispute with regard to any such work or material shall be final, and the whole work shall be executed to his satisfaction as evidenced by his certificate in writing, which certificate shall be a condition precedent to the right of the Contractor to be paid therefor.

5. The Mechanical Engineer or Inspector or any person deputed by them or either of them to represent them or either of them in their absence shall have free entry and access to the works of the Contractor at all times while this contract is being performed, and shall have all reasonable facilities afforded to them and their representatives as aforesaid to satisfy them that the same is being carried out and performed in accordance with this contract.

6. The acceptance of and payment for said locomotive engines or any of them by the Commission shall not be considered as any waiver of the obligations of the Contractor hereunder.

7. The Commission, in consideration of the premises, covenants with the Contractor that the Contractor from time to time and in all respects having fulfilled and performed the conditions of this contract (except the fulfillment of the guarantee which is to continue as set out in the specifications) on the Contractor's part intended to be fulfilled and performed shall be paid for each of said locomotive engines the sum of thirty-three thousand four hundred and ninety-five dollars ($33,495.00) within thirty days after delivery of said locomotive engines, respectively, as aforesaid, the above price per locomotive being made up as follows:

| | |
|---|---|
| Base price (including Vaughan vestibule cab) | $32,000 00 |
| Extra for Commonwealth cast steel cradle | 200 00 |
| Extra for Vanadium cast steel main frames | 350 00 |
| Extra for Mansell retaining rings on driving wheels | 125 00 |
| Extra for heat treated Vanadium heat-treated engine and tender springs | 600 00 |
| Extra for Franklin grate shakers | 250 00 |
| Extra for radial buffer between engine and tender | 70 00 |
| | $33,595 00 |
| Credit to T. & N. O. Ry., *re* substituting Russian type of vestibule cab instead of the Vaughan cab | 100 00 |
| Total | $33,495 00 |

In addition to the above the Contractor agrees to furnish and equip two (2) of the locomotives with Mudge-Slater smoke box arrangement at an extra cost of twenty-five dollars ($25.00) per engine, and one (1) locomotive with Boyer speed recorder at an extra cost of one hundred and forty-five dollars ($145.00).

The Contractor also will furnish and supply with the first engine delivered the following extra parts mentioned in paragraph 77, page No. 20 of specification No. 16 attached at prices set opposite same below:—

| | |
|---|---|
| Eight driving springs—Vanadium heat treated steel<br>Two tender springs—Vanadium heat treated steel<br>Two trailing truck springs—Vanadium heat treated steel<br>Four engine truck springs—Vanadium heat treated steel | $840 00 |
| One pair of engine truck wheels with cast steel centres, Standard Steel Co., O.H. steel tires and Mansell retaining rings | 200 00 |
| One pair of engine truck brasses | 11 00 |
| Six sets each of piston rod metallic packing rings, extension rod metallic packing rings and valve rod metallic packing rings | 110 00 |
| One complete set of general and detail blue prints | 25 00 |

8. It is understood that the price payable for each of said locomotive engines as aforesaid is based on the material therefor being imported into Canada under the present tariff of duties now in force, namely, seven per cent. (7%), and the Commission hereby agrees with the Contractor that in the event of any increase in the customs duties affecting the materials required in the construction of said locomotive engines the price hereby agreed to be paid for each of said locomotive engines shall be increased proportionately to the increase in said customs duties.

IN WITNESS WHEREOF the said parties have caused these presents to be executed under their respective corporate seals and under the hands of the proper officers in that behalf.

SIGNED, SEALED AND DELIVERED
in the presence of
A. GRADY.

JNO. J. HARTY,
*Vice-President and Sales Manager.*

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART,
*Chairman.*

A. B. ODLUM.

W. H. MAUND,
*Secretary-Treasurer.*

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## RE PURCHASE SIX CONDUCTORS' VANS.

Tenders received as follows:

| | | |
|---|---|---|
| National Steel Car Company, Ltd., Hamilton.... | $3,725 00 | f.o.b. North Bay |
| Preston Car & Coach Company, Ltd., Preston .. | 3,420 00 | f.o.b. North Bay |
| Canadian Car & Foundry Company, Montreal... | 3,675 00 | f.o.b. North Bay |

Contract awarded Preston Car & Coach Co., Ltd., lowest tenderer.

ARTICLES OF AGREEMENT made this 16th day of June, one thousand nine hundred and sixteen.

BETWEEN:

THE PRESTON CAR AND COACH COMPANY, LIMITED, hereinafter called the Contractor.

—and—

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH:

1. In this contract the word "Inspector" shall mean the Inspector for the time being appointed by the Commission to represent and act for the Commission in the supervision of the construction and in the inspection and certification of the caboose cars hereinafter referred to.

2. The Contractor will supply and provide all and every kind of work, labor, materials, articles and things whatsoever for the due construction and completion, and will well and duly built and complete in a perfect and workmanlike manner

six standard twenty-nine foot caboose cars with all necessary appliances for use on the line of railway of the Commission in strict compliance with the specifications hereto annexed and the plans relating thereto, to the complete satisfaction of the Inspector, and the Contractor will deliver the said caboose cars, completed, to the Commission, free on the railway tracks of the Commission at North Bay Junction on or before the 15th day of November, 1916, time being agreed to be material and of the essence of this contract, and in default of such delivery within the time aforesaid the Contractor will pay to the Commission, by way of liquidated damages, the sum of ten ($10) dollars in respect of each caboose car for each day which shall elapse after the date aforesaid before delivery of such caboose cars respectively, which sums the Commission is authorized to deduct from the purchase price hereinafter mentioned. It is understood and agreed between the parties hereto that in the event of strikes, labor troubles, fire, delay in transmission or inability beyond the Contractor's control to obtain delivery of necessary materials, or failure to receive necessary working details from the Commission, or from any other cause beyond the control of the Contractor, the said Contractor shall be exempted from strict compliance with the provisions of this agreement as to the time of delivery.

3. The Contractor will furnish and deliver to the Commission at Toronto, without extra charge, two complete sets of blue prints of all detailed plans of said caboose cars, and until delivery of such blue prints the Contractor shall not, be deemed for the purpose of this contract to have delivered said caboose cars or to be entitled to payment therefor.

4. The Inspector shall be the sole judge of all work and material done and supplied under this contract, and his decision on all questions in dispute with regard to any such work or material shall be final, and the whole work shall be executed to his satisfaction as evidenced by his certificate in writing which shall be given before he allows the cars to leave the Contractor's works, and which certificate shall be a condition precedent to the right of the Contractor to be paid therefor.

5. The Inspector and all persons from time to time authorized by him in that behalf shall have free entry and access to the works of the Contractor at all times while this contract is being performed, and shall have all reasonable facilities afforded to him and his representatives as aforesaid to satisfy him that same is being carried out and performed in accordance with this contract.

6. The acceptance and payment for one of said caboose cars shall not be considered as any waiver of the obligation of the contract with reference to the other of said caboose cars.

7. The Contractors guarantee all parts, and particularly the following, the enumeration of which is not in any way to limit the extent of this guarantee: steel underframe, wood superstructure framing, wheels, axles, truck springs; not to show signs of defect or weakness within three years' service under fair usage. The books or other records of the Commission shall be taken as final and conclusive evidence of the times said steel underframe, wood superstructure framing, wheels, axles, truck springs have lasted in service.

8. The Commission, in consideration of the premises, covenants with the Contractor that the Contractor from time to time, and in all respects having fulfilled

and performed the provisions of this contract (except the fulfillment of the guarantee which is to continue for three years) on the Contractors' part intended to be fulfilled and performed shall be paid for each of the said caboose cars the sum of three thousand four hundred and twenty dollars ($3,420.00) within thirty days after delivery of each caboose car f.o.b. tracks of the Commission at North Bay Junction as aforesaid.

IN WITNESS WHEREOF the said parties have caused these presents to be executed under their respective corporate seals under the hands of the proper officers in that behalf.

SIGNED, SEALED AND DELIVERED in the presence of

ROY V. BULLOCK.

THE PRESTON CAR AND COACH CO., LTD.
CHAS. S. WRIGHT,
*General Manager.*
F. CLARE,
*President.*
(Seal.)

A. B. PRATT.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART,
*Chairman.*
W. H. MAUND,
*Secretary-Treasurer.*
(Seal.)

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## CONSTRUCTION OF PASSENGER STATION, TIMMINS, ONT.

Contract awarded Messrs. Henderson & Angus, North Bay, lowest tenderer.

ARTICLES OF AGREEMENT made in triplicate this 19th day of June, in the year of our Lord one thousand nine hundred and sixteen.

BETWEEN:

LEONARD W. HENDERSON and HENRY W. ANGUS, both of the Town of North Bay in the District of Nipissing, Contractors, carrying on business under the firm name and style of HENDERSON & ANGUS, hereinafter called the Contractors.

—and—

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH:

1. In this contract the word "work" or "works" shall, unless the context requires a different meaning, mean the whole of the work and materials, matters and things required to be done, furnished and performed under this contract. The

Cutting O. A. C. No. 3 Oats, August 5th, on farm, Clergue Township. Sown on May 5th. Yield, 60 bushels per acre. South half Lot 1, Con. 2.

A field of Alsike Clover on Mr. Johnston's Farm near McCool. A field like this will yield 9 bushels of seed per acre.

word "Engineer" or "Chief Engineer" shall mean the Chief Engineer of the Temiskaming and Northern Ontario Railway Commission for the time being acting as such either directly or through the Assistant Chief Engineer, Division Engineer, Assistant Engineer, Resident Engineer or Inspector having immediate charge of the work or of that portion thereof limited by the particular duties entrusted to him. All instructions and directions or certificates given, or decisions made, by anyone acting under the authority of the Chief Engineer shall be subject to his approval and may be cancelled, altered, modified and changed as he may see fit. In all cases where the Contractors are dissatisfied with the decision of the Engineer or Inspector in immediate charge of the work, an appeal to the Chief Engineer may be made. It is declared and agreed that it shall not be in the power of the Chief Engineer or of any Engineer or Inspector to waive any of the provisions of this agreement and no waiver of any such shall on any pretence be claimed by the Contractors.

2. The Contractors will at their own expense provide all and every kind of work, labor, materials, articles and things whatsoever necessary for the due construction and completion, and will well and truly build and complete in perfect and workmanlike manner a brick and concrete passenger station at Timmins, Ontario, in strict compliance with the general conditions and specifications annexed hereto and which, for the purpose of identification, have been signed by the Chief Engineer and the Contractors and form part of this agreement, and to the plans, profiles and drawings in the office of the Chief Engineer and any further plans or drawings in addition thereto which the Chief Engineer may find necessary to provide from time to time for the full and complete performance of the work, and will deliver the said passenger station complete to the Commission on or before the 31st day of October, 1916; time being agreed to be material and of the essence of this contract.

3. The Contractors shall forthwith commence work and shall proceed diligently therewith at the rate required by the Chief Engineer, and shall complete the work, including extras and alterations, and notwithstanding any delay or hindrance by the Commission, to the satisfaction of the Chief Engineer by the date set out in the last preceding paragraph, or by such other date as on the written application of the Contractors for an extension of time the Chief Engineer may in writing substitute, and in default shall pay to the Commission by way of liquidated damages the sum of ten ($10) dollars for each day which shall or may elapse after the date mentioned in the last preceding paragraph or the date expressly substituted therefor in manner aforesaid by the Chief Engineer until the whole work shall be so completed and delivered.

4. The Chief Engineer shall be at liberty at any time either before the commencement or during construction of the works or any portion thereof to order any extra work to be done and to make any changes which he may deem expedient in the dimensions, character, nature, location or position of the works or any part or parts thereof or in any other things connected with the works, whether or not such changes increase or diminish the work to be done or the cost of doing the same, and the Contractors shall immediately comply with all requisitions of the Chief Engineer in that behalf, and shall commence and complete the work so ordered to be done within the time specified by the Chief Engineer, but the Contractors shall not

make any change in or addition to or omission or deviation from the work and shall not be entitled to any payment for any change, addition, deviation or any extra work unless such change, addition, omission, deviation or extra work shall have been first directed in writing by the Chief Engineer and notified to the Contractors, and the decision of the Chief Engineer as to whether any such change or deviation increases or diminishes the work and as to the allowance (under the Contractors' schedule of prices hereinafter referred to) to be made to the Contractors or deducted from the Contractors in respect of any such increase or diminution shall be final, and all the provisions of this contract shall apply to any changes, addition, deviations or extra work in like manner and to the same extent as to the work tendered for, and no changes, additions, deviations or extra work shall annul or invalidate this contract and no compensation shall be claimable by the Contractors for any loss of anticipated profits in respect of or in consequence of any change or deviation in or omission from the works.

5. The Chief Engineer shall be the sole judge of the work and material in respect of both quantity and quality, and his decision on all matters in dispute in respect to work and material shall be final, and no works or extra or additional works or changes shall be deemed to have been executed nor shall the Contractors be entitled to payment for the same unless the same shall have been directed in writing as hereinbefore provided and executed to the satisfaction of the Chief Engineer as evidenced by his certificate in writing, which certificate shall be a condition precedent to the right of the Contractors to be paid therefor.

6. The Contractors shall be at the risk of and shall bear all loss or damage whatsoever which may occur to the works or any of them until the same be fully and finally completed and delivered up to and accepted by the Commission, and if any such loss or damage occur before such completion, delivery and acceptance the Contractors shall immediately, at their own expense, repair, restore and re-execute the work so damaged so that the whole works or the respective parts thereof will be completed within the time hereby limited or such further time as shall be expressly substituted therefor in the manner aforesaid by the Chief Engineer.

7. The Contractors shall not at any time, in connection with the said work or any matter arising out of or connected with this contract, employ any person or persons in contravention of the Alien Labor Act or the provisions of the Railway Act of Ontario respecting the employment of alien labor, and shall pay to all workmen, laborers and servants employed in or about the work such rates of wages as shall or may be currently payable to workmen, laborers and servants engaged in similar occupations in the district in which said work shall be performed, and shall be responsible for the observance by all sub-contractors on their part of the provisions of this clause, and in the event of the Commission, who shall be the sole, absolute and final judge of these matters, being satisfied at any time that the Contractors or any sub-contractors have been guilty of any violation of any of the provisions of this clause the Commission shall have the right from time to time, and as often as it shall be satisfied that any such violation has taken place, to withhold all payments from the Contractors until any such violation of any of the provisions of this clause shall, in the opinion of the Commission, have ceased, and until such amends as the Commission shall require shall have been made for all such violation, and on being notified by the Commission of any such violation it shall be the duty

of the Chief Engineer to withhold all certificates from the Contractors until the Commission shall be satisfied that such violation has ceased and until amends shall have been made to the satisfaction of the Commission as aforesaid.

8. A competent superintendent or foreman shall be kept on the ground by the Contractors during all the working hours to receive the orders of the Chief Engineer, and should the person so appointed be deemed by the Chief Engineer incompetent or conduct himself improperly he may be discharged by the Chief Engineer and another shall be at once appointed in his stead; such superintendent or foreman shall be considered as the lawful representative of the Contractors and shall have full power to carry out all requisitions and instructions of the Chief Engineer.

9. In case any materials, or other things in the opinion of the Chief Engineer which are not in accordance with the several parts of this agreement or are not sufficiently sound or are otherwise unsuitable for the respective work, shall be used for or brought to the intended works or any part thereof, or in case any work shall be improperly executed the Chief Engineer may require the Contractors to remove the same and to provide proper materials or other things or to properly re-execute the work, as the case may be; and thereupon the Contractors shall and will immediately comply with the said requisition, and if twenty-four hours shall elapse and such requisition shall not have been complied with, the Chief Engineer may cause such materials or other things, or such work, to be removed, and, in any such case, the Contractors shall pay to the Commission all such damages and expenses as shall be incurred in the removal of such materials or other things or of such work, or the Commission may, in its discretion, retain and deduct such damages and expenses from any amounts payable to the Contractors.

10. All machinery and other plant, materials and things whatsoever provided by the Contractors for the works hereby contracted for, and not rejected under the provisions of the last preceding clause, shall, from time of their being so provided, become, and, until the final completion of the said work shall be the property of the Commission for the purpose of the said works, and the same shall on no account be taken away or used or disposed of except for the purposes of the said works without the consent in writing of the Chief Engineer, and the Commission shall not be answerable for any loss or damage whatsoever which may happen to such machinery or other plant, materials or things, provided always that upon the completion of the works and upon payment by the Contractors of all such moneys, if any, as shall be due from them to the Commission, such of the said machinery and other plant, materials and things as shall not have been used and converted in the works and shall remain undisposed of, shall upon demand be delivered up to the Contractors.

11. In case the Contractors shall make default or delay in diligently continuing to execute or advance the works to the satisfaction of the Chief Engineer, and such default or delay shall continue for six days after notice in writing shall have been given by the Chief Engineer to the Contractors requiring them to put an end to such default or delay, or in case the Contractors shall become insolvent or make an assignment for the benefit of creditors, or neglect either personally or by skilful and competent agent to superintend the works, or if any winding-up order is made against the Contractors under the provisions of the Winding-Up Act or any Act of a similar character applicable to the Contractors, or in

case the Contractors do not give access to and allow inspection of and the making of extracts from payrolls, books and vouchers, from time to time to the Chief Engineer or the Commission, or to any person or persons from time to time instructed by the Chief Engineer or by the Commission in that behalf, so that the said Chief Engineer may satisfy himself of the due observance by the Contractors and all sub-contractors of all the provisions of this contract, and especially of the provisions of clause 13 hereof, and that the Commission may satisfy itself from time to time of the due observance by the Contractors and by all sub-contractors of the provisions of clause 7 of this contract, or if the Contractors or any sub-contractors are, in the opinion of the Chief Engineer, who shall be the sole and final judge thereof, guilty of any violation of any of the provisions of clause 13 hereof, or if the Contractors or any sub-contractors are, in the opinion of the Commission, who shall be the sole and final judge thereof, guilty of any violation of any of the provisions of clause 7 hereof, then in any of such cases the Commission may take the work out of the hands of the Contractors and employ such means as it may see fit to complete the work, and the Contractors shall have no claim for damages or for any further payment in respect of the work performed, but shall nevertheless remain liable for all loss or damage which may be suffered by reason of the non-completion by them of the works; and all materials and things whatsoever and all horses, machinery and other plant provided by them for the purposes of the works shall remain and be considered as the property of the Commission for the purposes and according to the provisions and conditions contained in paragraph 14 hereof.

12. If the work to be done under this agreement shall be abandoned or be assigned by the Contractors without the consent of the Commission, or if the Contractors shall lose control of the work for any cause, excepting the acts of God or of the public enemy, or if at any time the Chief Engineer shall be of the opinion, and shall so certify in writing to the Commission, that the Contractors are wilfully and persistently violating any of the conditions or covenants of this agreement or are not executing said works in good faith, the Commission may take the work out of the hands of the Contractors and may employ such means as it may see fit to complete the work, and all the provisions of section 11 of the agreement shall thereupon apply and the Commission shall have in regard to the said work all the powers therein provided.

13. In case any sum due for the labor of any foreman, workman or laborer, or for the use of any horse or other animals or wagons or other plant employed upon or in respect of the said works or any of them, or the price of any materials or supplies purchased for the said work remains unpaid, the Chief Engineer may notify the Contractors to pay such sum and if two days elapse and the same be not paid the Commission may pay such sum and the Contractors covenant with the Commission to repay at once any and every sum so paid, and if the Contractors do not repay the same within two days the Commission may deduct the amount or amounts so paid by it from any sum that may then or thereafter be or become due by the Commission to the Contractors.

14. If the Chief Engineer shall at any time consider that the number of workmen, horses or quantity of machinery or other plant, or the quantity of proper materials respectively employed, provided or supplied by the Contractors on or for the said works is insufficient for the advancement thereof towards completion within the limited time, or that the works are, or some part thereof is, not being carried

on with due diligence, then in every such case the Chief Engineer may, by written notice to the Contractors, require them to employ or provide such additional workmen, horses, machinery or other plant or materials as the Chief Engineer may think necessary, and in case the Contractors shall not thereupon within seven days, or such other longer period as may be fixed by any such notice, in all respects comply therewith the Chief Engineer may, either on behalf of the Commission, or, if he sees fit, may as the agent of and on account of the Contractors, but in either case at the expense of the Contractors, provide and employ such additional workmen, horses, machinery and other plant or any portion thereof or such additional materials, respectively as he may think proper, and may pay such additional workmen such wages and for such additional horses, machinery or other plant and materials respectively such prices as he may think proper, and all such wages and prices respectively shall thereupon at once be repaid by the Contractors or the same may be retained and deducted out of any sum that may then or thereafter be or become due from the Commission to the Contractors, and the Commission may use in the execution or advancement of the said works not only the horses, machinery and other plant and materials so in any case provided by anyone on its behalf, but also all such as may have been or may be provided by or on behalf of the said Contractors.

15. Neither the acceptance of nor the payment for the said passenger station by the Commission shall be construed as any waiver of the obligations of the Contractors hereunder with reference thereto.

16. The Contractors shall furnish the Commission with a bond of the United States Fidelity and Guaranty Company as security for the performance of this contract, such bond being hereto annexed.

17. Approximate estimates of the work done, made up from returns of progress measurements and computed at the prices determined or agreed upon under the provisions of this agreement are to be made by the Engineer at the end of each calender month, and on or about the twentieth day of the next ensuing month payments equal to about eighty-five per cent. of the value of the work done, as shown by such approximate monthly estimate, shall be made to the Contractors upon presentation of the written certificate of the Chief Engineer that the work for or on account of which the certificate is granted has been duly performed and executed to his satisfaction and stating the value of such work computed as mentioned, and upon approval of such certificate by the Commission and the said certificate and such approval thereto shall be a condition precedent to the right of the Contractors to be paid the said eighty-five per cent. or any part thereof. The remaining fifteen per cent. shall be retained by the Commission until the final completion of the whole work as an additional security for the performance of this agreement by the Contractors, and when, in the opinion of the Chief Engineer, this agreement has been completely performed in accordance with the provisions thereof and until the Chief Engineer shall be satisfied that all wages of all workmen, laborers and servants of the Contractors and of all sub-contractors under them as well as the price of all materials and supplies made, procured or provided for the Contractors or for any of the sub-contractors have been duly paid he shall certify the same accordingly in writing under his hand with a final estimate of the work done by the Contractors and with a statement of the work dne and unpaid, and within two months after the granting of such certificate the amount so found due and unpaid

shall be paid to the Contractors upon delivery to the Commission of a good and valid release and discharge of and from any and all claims and demands for and in respect of all matters and things growing out of or connected with this agreement or the subject matter thereof. The written certificates of the Chief Engineer certifying to the final completion of the work to his entire satisfaction and of the evidence called for by this clause having been furnished to him shall be a condition precedent to the right of the Contractors to receive or be paid the amount certified by the Chief Engineer as due and unpaid or any part thereof, and the certificate of the Chief Engineer shall be conclusive as to the amount to be paid to the Contractor.

18. The Commission in consideration of the premises covenants with the Contractors that the Contractors from time and in all respects having fulfilled and performed the provisions of this contract on the Contractors' part intended to be fulfilled and performed will be paid for and in respect of the said work the sum of twenty-three thousand eight hundred and twenty-five dollars ($23,825.00) subject to such deductions and additions as shall be certified by the Chief Engineer in accordance with the terms of this contract; said deductions or additions to be based on the Contractors' schedule of prices hereto annexed being the schedule of prices called for by said general conditions: payments to be made from time to time on the progress estimates of the Chief Engineer and the final payment to be made within sixty days after the date of the Chief Engineer's final certificate of the completion of the said work.

19. In addition to the foregoing contract price the Commission will pay to the Contractors for extra work done under written orders of the Chief Engineer, not covered by this agreement but done in the proper execution of this agreement and for which prices are not named herein, the actual cost of such work with an additional fifteen per cent. on the cost of labor and materials for the use of tools, contractors' plant, superintendence and profit, but such actual cost shall not exceed the reasonable market value of such labor and materials as the case may be.

20. Where, in the opinion of the Chief Engineer, the work done or materials furnished is not, having regard to the nature and character of the work remaining to be performed or the materials remaining to be furnished, of sufficient value to justify computation at the prices agreed upon and determined under the provisions of this agreement, it shall be competent for the Chief Engineer in certifying the value of the work done or materials furnished for the purpose of such payment to disregard the prices so agreed upon or determined and to compute and certify its relative and proportionate value, having regard to the nature and character of the work remaining to be performed or materials remaining to be furnished in which case the Contractor shall only be entitled to receive eighty-five per cent. of the value of the work done or materials furnished as stated in such certificate, and he shall not be paid the difference between eighty-five per cent. of the value of the work done or materials furnished as so ascertained and certified, and eighty-five per cent. of the value of such work or materials according to the prices stipulated therefor under the provisions of this agreement until such time as the Chief Engineer, by reason of the performance of additional work or materials of greater relative value, shall certify that the Contractors are entitled to receive the same.

21. It is distinctly agreed that no implied contract of any kind whatsoever by or on behalf of the Commission shall arise or be implied from anything contained in this contract, including the said general conditions, specifications, plans and drawings, or the tender of the said Contractors for the said work or from any position or situation of the parties at any time; it being clearly understood and agreed that the express contracts, covenants, agreements and stipulations contained in these presents and in the said general conditions, specifications, plan and drawings are and shall be the only contracts, covenants, agreements and stipulations upon which any right of action against the Commission is to be founded; it being further expressly agreed that the said general conditions and specifications and these presents are to be read together, and in case of any discrepancy between these presents and anything contained in the said specifications the provisions of these presents shall govern. In case of any discrepancy appearing at any time between the specifications, profiles, plans, drawings and detailed drawings or any of them the Contractors shall follow such one of them as the Chief Engineer shall in writing direct.

AS WITNESS the hands and seals of the said Contractors and the Corporate seal of the said Commission under the hands of its proper officers in that behalf.

SIGNED, SEALED AND DELIVERED in the presence of
JEANETTE M. ANGUS.

A. B. ODLUM.

HENDERSON AND ANGUS.
G. W. HENDERSON.
H. W. ANGUS.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART, *Chairman.*
W. H. MAUND, *Secretary-Treasurer.*

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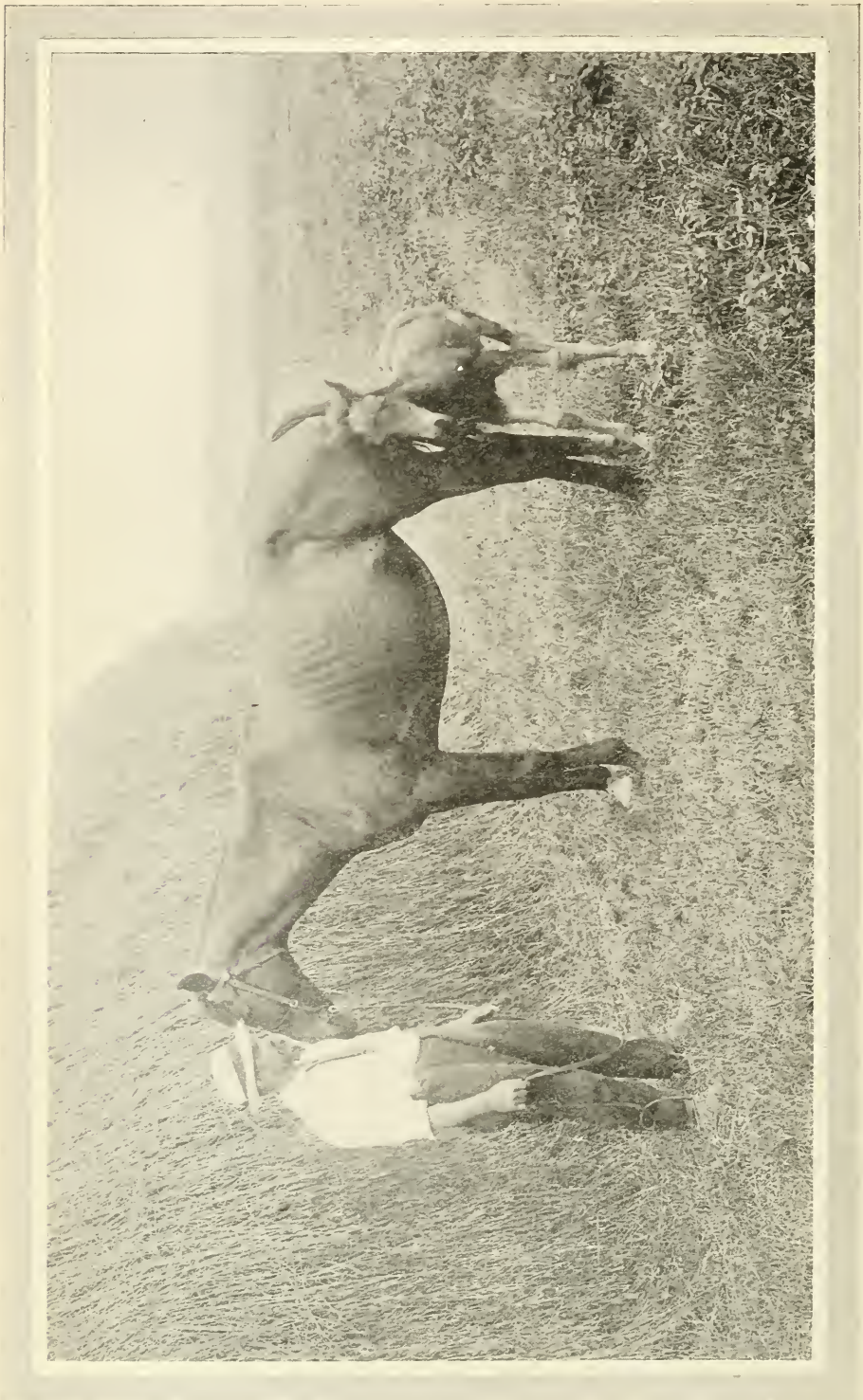
BOND No. 402267-16.

*Issued in duplicate.*

KNOW ALL MEN BY THESE PRESENTS that we, LEONARD W. HENDERSON and HENRY W. ANGUS, both of the Town of North Bay, in District of Nipissing, Contractors, carrying on business under the firm name and style of HENDERSON AND ANGUS, hereinafter called the Principals, and the UNITED STATES FIDELITY AND GUARANTY COMPANY, a corporation created and existing under the laws of the State of Maryland, and whose principal office is located in Baltimore City, Maryland, duly registered under the laws of the Dominion of Canada and entitled to transact business therein, hereinafter called the Surety, are held and firmly bound unto the Temiskaming and Northern Ontario Railway Commission, hereinafter called the Commission, in the full and just sum of two thousand three hundred and eighty-two dollars and fifty cents ($2,382.50) for the payment of which sum well and truly to be made the said Principals and the said Surety bind themselves and their respective heirs, executors, administrators, successors and assigns jointly and severally firmly by these presents.



Horse owned by Mr. Frank Hunter, Englehart, Ont.

SIGNED, SEALED AND DELIVERED by the Principals at North Bay, Ontario, this 19th day of June, 1916, and by the said Surety at Toronto, Canada, this 28th day of June, 1916.

WHEREAS the said Principals have entered into a written contract hereto annexed with the Commission for the building of a brick and concrete passenger station at Timmins, Ontario.

NOW THEREFORE the condition of the foregoing obligation is such that if the said Principals, their heirs, executors, administrators, successors or assigns do or shall well and faithfully do all the work and furnish all the materials and observe and perform all the matters and things required to be done, furnished, observed and performed by them under the said contract hereto annexed within the times and in the manner and according to the true intent and meaning of the said contract, then this obligation shall be void otherwise the same shall remain in full force and virtue.

PROVIDED, HOWEVER, that this bond is issued subject to the following conditions and provisions:

1. That no liability shall attach to the Surety hereunder unless in the event of any default on the part of the Principals in the performance of any of the terms, covenants and conditions of the said contract the Commission shall promptly upon knowledge thereof by its Secretary, and in any event not later than thirty days after such knowledge of default by its Secretary, deliver to the Canadian Manager or Assistant Manager of the said Surety at its office in the City of Toronto, written notice thereof, with a statement of the principal facts showing such default and the date thereof nor unless the said Commission shall deliver written notice to the said Manager or Assistant Manager of the Surety at its office aforesaid, and the consent of the Surety or its Manager or Assistant Manager aforesaid thereto obtained before making to the Principals the final payment provided for under said contract.

2. That in case of such default on the part of the Principals the Surety shall have the right, if it so desires, to assume and complete or procure the completion of said contract, and in case of such default the Surety shall be subrogated and entitled to all the rights of the Principals arising out of the said contract and otherwise including all securities and indemnities, if any, heretofore received by the Commission, and all deferred payments retained, percentages and credits due to the Principals at the time when the Surety shall have assumed said contract or to become due thereafter by the terms and dates of said contract.

3. That in no event shall the Surety be liable for any greater sum than the penalty of this bond or subject to any suit, action or proceeding which is instituted later than the 31st day of October, 1917.

IN WITNESS WHEREOF the Principals have executed these presents under their hands and seals, and the said Surety has caused these presents to be executed by its attorney in fact, sealed with its corporate seal, the day and the year first above written.

HENDERSON AND ANGUS.
L. W. HENDERSON.
H. W. ANGUS. (Seal.)

WITNESS:
JEANETTE M. ANGUS.

UNITED STATES FIDELITY AND GUARANTY CO.
W. E. KIRKPATRICK.

ARTICLES OF AGREEMENT made in duplicate this 7th day of October, in the year of our Lord one thousand nine hundred and sixteen.

BETWEEN:

F. R. GIBSON, of the Town of Haileybury, in the District of Timiskaming, hereinafter called the "Contractor."

Of the First Part.

—and—

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the "Commission."

Of the Second Part.

WITNESSETH:

1. In this contract the word "work" or "works" shall, unless the context requires different meaning, mean the whole of the work and materials, matters and things required to be done, furnished and performed under this contract. The word "Engineer" shall mean the Chief Engineer for the time being appointed by the Commission and having control over the work.

2. The Contractor will at his own expense provide all and every kind of work, labor, materials, articles and things whatsoever for the due construction and completion, and will well and duly build, install and complete in a perfect and workmanlike manner heating and plumbing systems in four semi-detached tenement houses of the Commission at Iroquois Falls, Ontario, in strict compliance with the specifications hereto annexed and with the plans and drawings relating thereto to the complete satisfaction of the Engineer, and will deliver said heating and plumbing systems in each of said tenement houses complete to the Commission on or before the 16th day of November, 1916; time being agreed to be material and of the essence of this contract.

3. The Contractor shall forthwith commence work and shall proceed diligently therewith at the rate required by the Engineer, and shall complete the work, including extras and alterations, and notwithstanding any delay or hindrance by the Commission to the satisfaction of the Engineer by the date set out in the last preceding paragraph or by such other date as on the written application of the contractor for an extension of time the Engineer may in writing substitute, and in default shall pay to the Commission by way of liquidated damages the sum of five dollars ($5.00) for each day which shall or may elapse after the date mentioned in the last preceding paragraph for the completion of the heating and plumbing system in each of said tenement houses, or the date or dates expressly substituted therefor in manner aforesaid by the Engineer until the whole work in respect of each of said tenement houses shall be so completed and delivered.

4. The Engineer shall be at liberty at any time either before the commencement or during the construction of the works or any portion thereof to order any extra work to be done and to make any changes which he may deem expedient in the dimensions, character, nature, location or position of the works or any part or parts

thereof, or in any other things connected with the works whether or not such changes increase or diminish the work to be done or the cost of doing the same, and the Contractor shall immediately comply with all requisitions of the Engineer in that behalf and shall commence and complete the work so ordered to be done within the time specified by the Engineer, but the Contractor shall not make any change in or addition to or omission or deviation from the work, and shall not be entitled to any payment for any change, addition, deviation or any extra work unless such change, addition, omission, deviation or extra work shall have been first directed in writing by the Engineer and notified to the Contractor, and the decision of the Engineer as to whether any such change or deviation increases or diminishes the work and as to the allowance to be made to the Contractor or deducted from the Contractor in respect of any such increase or diminution shall be final, and all the provisions of this contract shall apply to any changes, additions, deviations or extra work in like manner and to the same extent as to the work tendered for, and no changes, additions, deviations or extra work shall annul or invalidate this contract, and no compensation shall be claimable by the Contractor for any loss of anticipated profits in respect of or in consequence of any change or deviation in or omission from the works.

5. The Engineer shall be the sole judge of the work and material in respect of both quantity and quality, and his decision on all matters in dispute in respect to work and material shall be final, and no works or extra or additional works or changes shall be deemed to have been executed, nor shall the Contractor be entitled to payment for the same unless the same shall have been directed in writing as hereinbefore provided and executed to the satisfaction of the Engineer as evidenced by his certificate in writing, which certificate shall be a condition precedent to the right of the Contractor to be paid therefor.

6. The Contractor shall be at the risk of and shall bear all loss or damage whatsoever which may occur to the works or any of them until the same be fully and finally completed and delivered up to and accepted by the Commission, and if any such loss or damage occur before such time for completion, delivery and acceptance the Contractor shall immediately, at his own expense, repair, restore and re-execute the work so damaged so that the whole works or the respective parts thereof will be completed within the time hereby limited.

7. In case the Contractor shall make default or delay in diligently continuing to execute or advance any of the works to be performed under this contract to the satisfaction of the Engineer, or shall make default in commencing any portion or portions of the work or complete same within the periods specified by the Engineer as provided for in section 3 of this contract, and such default and delay shall continue for six days after notice in writing shall have been given by the Engineer to the Contractor requiring him to put an end to such default or delay, or in case the Contractor shall become insolvent or shall, without the written consent of the Commission, make an assignment of this contract, or shall, without the written consent of the Engineer, make any sub-contract, or neglect personally to superintend the works, then and in any of such cases the Commission may take all the work under this contract off the Contractor's hands and employ such means as it may see fit to complete the work embraced in the contract, and in such case the Contractor shall have no claim for any further payment in respect of the work per-

formed, but all things done and means employed under this section by the Commission shall be as binding on the Contractor as if the things done and means employed had been done and employed by him under this contract, but the Contractor shall nevertheless remain liable for all loss or damage which shall be suffered by the Commission by reason of the non-completion by the Contractor of the works, and no question or claim shall be raised or made by the Contractor by reason of or on account of the ultimate cost of the work so taken over proving greater than in the opinion of the Contractor it should have been, and all materials, articles and things whatsoever, and all machinery and other plant provided by the Contractor for the purposes of the works shall remain and be considered as the property of the Commission for the purposes of the said works, and the Commission may at its option sell or otherwise dispose of the whole or a portion of such materials, articles and things whatsoever, machinery and other plant, and may retain the proceeds of such sale or disposition or a sufficient part thereof on account of or in satisfaction of any loss which it may have sustained by reason aforesaid.

8. Neither the acceptance nor the payment for the said heating and plumbing systems or any part thereof by the Commission shall be construed as any waiver of the obligations of the Contractor with reference thereto.

9. The Commission in consideration of the premises covenants with the Contractor that the Contractor from time to time in all respects having fulfilled and performed the provisions of this contract on the Contractor's part intended to be fulfilled and performed will be paid for and in respect of the said heating and plumbing systems so completed as aforesaid the sum of fourteen hundred and forty dollars ($1,440) subject to such deductions or additions as shall be certified by the Engineer; payments to be made from time to time on progress certificates of the Engineer and the final payment to be made within forty (40) days after the date of the Engineer's final certificate of the completion of said work.

10. In addition to the foregoing contract price the Commission will pay to the Contractor for extra work done under written orders of the Chief Engineer not covered by this agreement but done in the proper execution of this agreement and for which prices are not named herein the actual cost of such work with an additional fifteen per cent. on the cost of labor. This percentage shall include all overhead charges for offices, superintendence, general expenses, use of tools, equipment, profit, etc., but such actual cost shall not exceed the reasonable market value of such labor.

11. As security for the due performance, execution, and completion of this contract by the Contractor the Contractor shall upon the execution hereof deposit with the Commission the sum of one hundred and forty-four dollars in cash, or in lieu of such deposit furnish the Commission with a bond of the United States Fidelity and Guaranty Company or such other guarantee company as the Commission shall approve for a like amount.

12. It is distinctly agreed that no implied contract of any kind whatsoever by or on behalf of the Commission shall arise or be implied from anything contained in this contract including the said specifications and the plans and drawings or the tender of the said Contractor for said work or from any position or situation of the

parties at any time, it being clearly understood and agreed that the express contracts, covenants, agreements and stipulations contained in these presents and in the said specifications, plans and drawings are and shall be the only contracts, covenants, agreements and stipulations upon which any right of action against the Commission is to be founded; it being further expressly agreed that the said specifications and these presents are to be read together, and in case of any discrepancy between these presents and anything contained in such specifications the provisions of these presents shall govern, and in case of any discrepancy appearing at any time between the specifications, plans and drawings or any of them the Contractor shall follow such one of them as the Engineer shall in writing direct.

IN WITNESS WHEREOF the Contractor has hereunto set his hand and seal and the Commission has affixed its corporate seal under the hands of its proper officers in that behalf.

SIGNED, SEALED AND DELIVERED
in the presence of:
KATHLEEN MASON.

A. B. ODLUM.

F. R. GIBSON.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART,
*Chairman.*
(Seal.)
W. H. MAUND,
*Secretary-Treasurer.*

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## SPECIFICATIONS FOR HEATING AND PLUMBING SYSTEMS IN SEMI-DETACHED TENEMENT HOUSES AT IROQUOIS FALLS.

### GENERAL.

*Work to be Done.*

The work to be governed by these specifications consists in the furnishing of all materials, tools, labor and equipment necessary for the complete installation of hot air heating systems and complete plumbing systems in four (4) tenement houses at Iroquois Falls, Ont., for the Temiskaming and Northern Ontario Railway Commission.

*Terms Employed.*

Wherever the word "Commission" is employed in these specifications it refers to the Temiskaming and Northern Ontario Railway Commission.

Wherever the word "Contractor" is employed in these specifications it refers to the Contractor for the work governed by these specifications.

Wherever the word "Engineer" is employed in these specifications it refers to the Chief Engineer of the Temiskaming and Northern Ontario Railway, or his regularly appointed Assistant or Inspector.

*Labor and Materials.*

The Contractor shall furnish all labor, tools and materials necessary for the complete and substantial installation of everything described or implied for the work.

*Work Done by Commission.*

The Commission is now erecting the four (4) tenement houses at Iroquois Falls and will also install all soil drains in basement floors and will leave all drains with elbow ends so that this Contractor can make proper connections with soil stacks.

The Commission will further have the water supply pipe brought into basement of each building.

HOT AIR HEATING SYSTEM.

*Furnace.*

Furnish and set up in basement of each house one No. 308 Pease "Economy" hot air furnace having a capacity of 14,000 cu. ft., a full set of five tools shall be installed with each furnace. Furnaces to be located as shown on plans.

*Smoke Pipe.*

Connect furnace to chimney flues with No. 20 gauge galvanized iron smoke pipe to be the same size as opening on top of furnace and have a proper damper in same.

*Bends.*

All bends and turns in all pipes to be made with three-piece elbows; all pipes to be firmly supported.

*Cold Air Ducts.*

Run two cold air ducts in basement from furnace to register faces as shown in plans.

*Hot Air Pipes.*

Furnish and set up to the furnace and register faces pipes and ducts to be made air and gas proof of 1 x tin. All pipes in partitions to be wrapped with asbestos paper and all turns and bends in leaders to be made as above specified under "Bends."

*Registers.*

All registers to be of cast iron, japanned, of approved design and installed according to sizes and locations shown on plans. All register boxes to be made double.

*Basement Pipes.*

All horizontal pipes in basement to be round and according to sizes shown as plans. All basement pipes to be firmly supported, and where passing through partitions, etc., are to have suitable collars.

New Liskeard Dock, January 22, 1915.

New Liskeard Harbour, March 10, 1915.

*Dampers and Regulators.*

All pipes to be provided with full dampers and place a regulator where directed on ground floor.

*Protect Woodwork.*

Wherever pipes are in close contact with woodwork the wood is to be properly covered with tin and protected from any danger by fire.

*Testing and Final Acceptance.*

When all work or works have been completed each heating system shall be thoroughly tested by and at the expense of the Contractor. Each system shall be tested for a period of ten (10) hours working the boiler to its capacity. All tests shall be carried on in the presence of and subject to the approval of the Engineer. After the above test has been completed the Commission requires a test on each system for a period of thirty (30) days, operating under working conditions, after which time, if satisfactory and approved by the Engineer, shall issue final certificate as acceptance of all works. The full expense for the 30 days' test will be borne by the Commission.

PLUMBING SYSTEM.

*General.*

The Contractor shall supply and install in each of the four (4) tenement houses all plumbing fixtures and materials necessary in accordance with the following specifications and plans and to the entire satisfaction of the Engineer.

*Fixtures.*

Supply and install the following fixtures selected from Empire Mfg. Coy., Ltd., catalogue "A."

*Bath-room.*

One (1) enamelled iron lavatory, plate A-1556.P with soap cups attached supported on concealed wall hanger. D pattern bowl fitted with A-429 faucets, nickel plated with 2½-inch shank, 1½-inch P trap and ½-inch angle supplies with stops.

One (1) porcelain enamelled bath, plate A-1427, length 5½ ft. with ½-inch supply pipes and compression double bath cocks, complete with waste and overflow, chain and rubber stopper.

One (1) low down water closet, plate A-10.B complete with all fittings.

One (1) porcelain enamelled sink, size 20 in. x 30 in. with apron and back in one piece, plate A-1631, complete with bibs, strainer and 1½-inch P trap.

*Soil Pipes.*

All cast iron pipes must be sound, smooth and cylindrical, free from cracks, sand holes or other defects, of a uniform thickness 4 inches diameter and of a grade known as "extra heavy." All joints must be made with picked oakum and molten lead, thoroughly caulked and gas tight. All vertical runs of cast iron pipe shall be

firmly secured in position with strong pipe placed under each hub and all horizontal runs with strong iron hangers not more than five feet apart. The soil pipe shall be carried up through the roof and made water tight by heavy sheet lead flashing. All waste connections are to be made with "Y's" and bends.

*Vent Pipes.*

All traps in the building shall be ventilated by running 2-inch iron vent pipe connected to the traps by a short length of lead pipe of the full size of the waste on which the trap is located; these vent pipes to be run into the soil or waste pipe above the highest fixtures or extended independently through the roof.

*Waste Pipes.*

Waste pipes from wash basin and bath shall be 1½-inch medium lead pipe. All connections of lead to iron pipe shall be made with brass ferrules with neatly wiped joints and caulked into iron hubs. All connections of lead pipe to fixtures to be made with brass couplings neatly wiped to lead pipe.

*Range Boiler.*

Supply and install in kitchen a 30 gallon galvanized iron range boiler mounted on cast iron stand, boiler to be left so that connection can be made to stove when required.

*Painting.*

All plumbing pipes shall be decorated in two coat work (one of white and one of bronze) as directed by the Engineer.

*Water Supply.*

Water supply pipes will be brought into the basement of each house by the Commission, but this Contractor will supply all labor and materials to connect up all fixtures specified above.

*Ceiling and Floor Plates.*

All pipes passing through walls, floors and ceilings to be cased with suitable floor and ceiling plates and left in a neat and workmanlike condition.

*Payments.*

Monthly payments will be made to the extent of 85 per cent. of value of the work done, as estimated by the Engineer, the balance after system has had a thirty days' test.

No payment except the final one shall be construed as accepting any part of the work as satisfactory.

*Completion.*

All heating work must be carried on during the construction of the buildings and this contract must be completed on or before the 1st of November, 1916.

(Sgd.) F. R. GIBSON.

## CARTAGE—COBALT.

MEMORANDUM OF AGREEMENT made this 5th day of March, A.D. 1916.

BETWEEN:

JOSEPH SIMMS and D. McKAY, both of the Town of Cobalt, Cartage Agents, carrying on business under the firm name and style of THE SIMMS CARTAGE COMPANY, hereinafter called the Contractor.

—and—

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WHEREAS the Contractor proposes to establish a cartage service business in and adjoining Cobalt and elsewhere, and has requested the Commission to enter into the following agreement for cartage service of freight in and adjoining Cobalt:

NOW THESE PRESENTS WITNESS that the agreement between the parties in the premises is as follows:

1. The Contractor agrees to immediately provide a sufficient equipment of horses, vehicles and all necessary appliances, and a sufficient force of men to efficiently and promptly handle the cartage business of merchandise to and from the Cobalt Station of the Commission for receipt and delivery in Cobalt and vicinity and that it will promptly and efficiently during the continuance of this agreement deliver freight received from and for the Commission in Cobalt and the vicinity at the rates and on the terms hereinafter provided.

2. The Commission, so far as entitled to control the same, will during the currency of this agreement, hand over to the Contractor all freight included in the Canadian Freight Association's cartage classification which shall require to be carted for delivery or shipment in Cobalt and vicinity, due regard being had to the right of consignees or shippers to take delivery direct or to ship through carters designated by them.

3. The Contractor shall be entitled to charge for its services in the premises not exceeding the following rates: For car loads to any one point within the Town of Cobalt—four cents per one hundred pounds, and for freight in less than car loads to any one point within the Town of Cobalt, five cents per one hundred pounds, provided these rates shall not include "smalls" (being consignments weighing three hundred pounds or less) or any freight not covered by the Canadian Freight Association's cartage classification; and for "smalls" fifteen cents per "small."

4. For freight not covered by the Canadian Freight Association's cartage classification and for all freight, for delivery outside the limits of the Town of Cobalt the Contractor shall make its own terms with the consignees and shall be entitled to charge accordingly.

5. The Commission, so far as bound to make delivery to the Contractor hereunder, shall deliver to, and the Contractor shall take delivery of all freight from the Commission at the freight shed door or car door as the case may be, and the Commission agrees to keep the freight shed doors open from seven-thirty a.m. to five p.m. each lawful day, and from the first of May to the first of November in each year from seven a.m. to five p.m.

6. The Contractor (except where the Commission shall have otherwise directed in writing) shall before delivery of any freight collect all railway and other charges against same including cartage, and if the contractor shall in any case fail so to collect the charges he will in all respects be responsible therefor as if same had been collected, and the Contractor will pay over to the Commission in cash within twenty-four hours all moneys collected or which should have been collected as aforesaid during each day, including both railway and other charges and cartage.

7. All goods taken out of which delivery shall be refused shall be promptly returned by the Contractor to the Commission free of charge in respect of either delivery or return, and all freight charges on shipments charged by the Commission to the Contractor shall, when delivery is not accepted, be credited back by the Commission to the Contractor upon the return to the Commission such goods, but in that case the cartage shall be added to the freight and when delivery is subsequently made by the Contractor, the Contractor shall be credited with cartage at the aforesaid rate on any such freight.

8. The Commission shall provide desk room for one representative of the Contractor in the Commission's Cobalt station building, free of charge, and will at all times keep a competent clerk in charge of the accounts of the freight delivered to the Contractor and to check over the Contractor's collections daily and to duly receipt for same.

9. The Commission will pay over to the Contractor cartage charges received by the Commission for or on behalf of the Contractor on statements showing weight and "smalls" made upon the seventh, fourteenth, twenty-first and end of each month, such payments to be made from the Toronto office of the Commission forthwith on the accounts being vouched by the local agent of the Commission at Cobalt, and the Traffic Accountant of the Commission, subject to errors, if any, being corrected in subsequent statements.

10. This agreement shall continue in force for two years from the date hereof, subject to the right of either party to terminate same at an earlier date on giving to the other party not less than six months' notice in writing of the desire to terminate the agreement, such notice, if given by the Commission, to be given by the Superintendent of Traffic thereof for the time being and may be given by delivery thereof to any representative of the Contractor or to the Contractor's representative at the Commission's Cobalt Station or to any grown person in the Contractor's office at Cobalt, and if given by the Contractor may be given by delivery thereof to the Chairman, Secretary or Superintendent of Traffic of the Commission, and in case of the giving of any such notice the agreement shall terminate on the date fixed by such notice.

11. It is expressly agreed that if the Contractor is unable to fully carry out at any time any of the terms of this agreement by reason of workmen's strikes,

storms or impassable roads, or by any other matter wholly beyond its control such inability in any such case shall not be considered a breach of this agreement and the Contractor shall not be liable in damages in respect of any failure occurring by reason of any of the causes aforesaid.

12. The Contractor shall not assign or sublet this contract without the consent in writing of the Commission first had and obtained.

13. If the Contractor shall assign or sublet this contract without the consent in writing of the Commission as aforesaid, or if the goods or chattels of the Contractor shall at any time be taken in execution or in attachment by any creditor of the Contractor, or if the said Contractor shall make an assignment for the benefit of creditors, or shall take the benefit or shall be put into liquidation under any Act which may be in force for bankrupt or insolvent debtors or companies, or if the Contractor shall remove its business from the Town of Cobalt, or shall not promptly and faithfully and to the satisfaction of the Superintendent of Traffic for the time being of the Commission do and carry on the cartage business hereby required to be done in accordance with the terms of this agreement, this agreement shall, at the option of the Commission become and be forfeited and void without notice; it being further agreed that waiver, if any, by the Commission of any cause of forfeiture shall apply only to the cause of forfeiture so waived and shall not affect the right of the Commission in respect of any future or other cause of forfeiture.

14. The Contractor shall upon the execution hereof furnish and deliver to the Commission a bond in the penal sum of one thousand dollars in form satisfactory to the Commission, with a surety or sureties approved by the Commission, conditioned for the due performance and observance by the Contractor of this contract.

15. The Contractor will deliver all goods received from the Commission for delivery to the proper consignees and will indemnify the Commission in respect of all misdeliveries.

AS WITNESS the hands and seals of the Contractor and the Corporate seal of the Commission under the hands of the proper officers in that behalf the day and year first above written.

SIGNED, SEALED AND DELIVERED
In the presence of:
D. H. Way.

Jos. Simms.
D. McKay.

Temiskaming and Northern Ontario Ry. Com'n.
J. L. Engleheart,
*Chairman.*
(Seal.)

A. B. Pratt.

W. H. Maund,
*Secretary-Treasurer.*

Coiling Pure Red Clover Hay; yield, 3 tons per acre. Lot 1, Con. 2, Tp. Clergue.

Mixed Timothy, Alsike and Red Clover. Lot 1, Con. 2, Township Clergue.

## LEASE LAND, LATCHFORD, AND SALE OF OLD BUILDINGS, EMPIRE LUMBER COMPANY.

THIS INDENTURE made the 11th day of July in the year of our Lord one thousand nine hundred and sixteen.

IN PURSUANCE OF THE SHORT FORMS OF LEASES ACT.

BETWEEN:

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

Of the First Part.

—and—

M. J. CONKEY and A. J. MURPHY, of the Town of Latchford, in the District of Timiskaming, carrying on business under the firm name and style of CONKEY AND MURPHY, hereinafter called the Lessees.

Of the Second Part.

WHEREAS the Lessees intend to erect a lumber mill and to carry on a lumbering and milling business at or near Latchford Station, in the District of Temiskaming, and to take advantage of the transportation facilities afforded by the railway of the Commission.

AND WHEREAS the Lessees desire a lease of the lands hereinafter described for use as a lumber yard and mill site in carrying on their business, and desire also to purchase from the Commission the buildings hereinafter mentioned at present situate on said lands, and to have a railway siding built connecting said lands with the said railway on the terms hereinafter mentioned.

NOW THIS INDENTURE WITNESSETH that in consideration of the premises and of the rents, covenants and agreements hereinafter respectively reserved and contained on the part of the said Lessees their executors, administrators, successors and assigns to be respectively paid, observed and performed the said Commission doth hereby demise and lease unto the Lessees, their executors, administrators, successors and assigns ALL AND SINGULAR that certain parcel or tract of land and premises, situate, lying and being in the Township of Coleman, in the District of Temiskaming, and Province of Ontario, and being composed of a portion of the station grounds of the Temiskaming and Northern Ontario Railway Commission at Latchford Station, and which parcel may be more particularly described as follows, that is to say: COMMENCING at a point in the easterly limit of the right-of-way of the Temiskaming and Northern Ontario Railway, the position of which point may be definitely located as follows: beginning at the B.C. (in the centre line of the said right-of-way) of a curve whose degree of curvature is 3° 57′ and whose central angle is 54° 03′ and on which curve occurs the original 94th mile post and the chainage of which B.C. is 368-02.4: thence northerly along the said centre line 250 feet: thence south-easterly and at right angles to the said centre line 49.5 feet to the said point which is the place of commencement: thence

still south-easterly and at right angles to the said centre line 150 feet more or less to the high water mark on the westerly shore of the Montreal River; thence southerly and westerly following the said high water mark to the intersection with the aforementioned easterly limit of the said right-of-way; thence in a north-easterly, northerly and north-westerly direction following the said limit of said right-of-way to the place of commencement and containing by admeasurement 9.5 acres, more or less, as shown on plan of survey prepared by H. M. Anderson, O.L.S., and dated at North Bay, Ont., June 7th, 1915, the same hereto attached.

TO HAVE AND TO HOLD the said demised premises for and during the term of six years to be computed from the date hereof and thenceforth next ensuing and fully to be complete and ended.

YIELDING AND PAYING therefor yearly and every year during the said term unto the said Commission, its successors or assigns, the sum of one hundred dollars ($100) of lawful money of Canada without any deduction, defalcation or abatement whatsoever to be payable on the following days and times, that is to say, in advance on the 11th day of July in each and every year during the currency of this lease, the first of such payments to become due and to be made on the date of the execution of these presents and the last payment to become due and to be paid on the 11th day of July, 1921.

The Commission hereby agrees to sell and the Lessees hereby agree to purchase the following buildings at present situate upon the lands hereby demised, namely, blacksmith shop, stable, planing mill, storehouse and the framework of mill as it at present stands, all of said buildings being shown outlined in red on the plan hereto annexed. The purchase price for said buildings shall be the sum of five hundred dollars ($500) payable as follows: $100 in cash (the receipt whereof is hereby acknowledged) and the balance amounting to $400 in four equal consecutive annual payments of $100 each, payable on the 11th days of July in the years 1917, 1918, 1919, and 1920, with interest on said purchase price or so much thereof as shall from time to time remain unpaid at the rate of six per cent. per annum computed from the date hereof payable on the 11th days of July in each of the years 1917, 1918, 1919 and 1920, PROVIDED that the Lessees may, while not in default hereunder, pay off the whole of said purchase money at any time without notice or bonus upon paying therewith interest thereon at the rate aforesaid up to the date of such payment.

The Lessees hereby covenant with the Commission that until the purchase price for said buildings has been paid in full they will insure and keep the same insured up to their full insurable value in dollars currency with loss if any payable to the said Commission, and will forthwith upon demand deliver to the Commission the insurance policy or policies covering said buildings and all renewal receipts therefor.

The said Lessees hereby covenant and agree with the Commission that in consideration of the premises and of the leasing and letting by the said Commission to the Lessees of the lands and premises above mentioned for the term hereby created (and it is upon that express understanding that these presents are entered into), that notwithstanding anything contained in Section thirty of Chapter one hundred

and fifty-five of the Revised Statutes of Ontario, 1914, or in any other section of the said Act, or any other Statute which may hereafter be passed to take the place of said Act or to amend the same, that none of the goods or chattels of the said Lessees at any time during the continuance of the term hereby created, on said demised premises, shall be exempt from levy by distress for rent in arrear by said Lessees as provided for by section or sections of the said Act above named, or any amendment or amendments thereto, and that upon any claim being made for such exemption by said Lessees or on distress being made by the said Commission this covenant and agreement may be pleaded as an estoppel against said Lessees in any action brought to test the right of the levying upon any such goods as are named as exempted in said section or sections or amendment or amendments thereto. Said Lessees waiving as they hereby do all and every benefit that could or might have accrued to them under and by virtue of the said section or sections of said Act or any amendment or amendments thereto but for the above covenant.

The said Lessees covenant with the said Commission to pay rent.

AND to pay taxes and will not assign or sublet without leave.

AND ALSO that if the term hereby created shall be at any time seized or taken in execution or in attachment by any creditors of the said Lessees, or if the said Lessees shall make any assignment for the benefit of creditors or becoming bankrupt or insolvent shall take the benefit of any Act that may be in force for bankrupt or insolvent debtors, the said term shall immediately become forfeited and void, and in such case it shall be lawful for the Commission at any time hereafter into and upon the said demised premises or any part thereof in the name of the whole to re-enter and the same to have again, re-possess and enjoy as of former estate anything herein contained to the contrary notwithstanding.

PROVISO for re-entry by the said Commission on non-payment of rent or non-performance of covenants.

The said Commission covenants with the said Lessees for quiet enjoyment.

The said Lessees may construct a siding connecting the Lessees' mill and other buildings with the railway of the Commission, the location of such siding to be approved by the Chief Engineer of the Commission before any work on the construction of the same shall commence, it being understood and agreed between the parties hereto that upon the approval of the location of the said siding by the said Chief Engineer as aforesaid the said Lessees shall execute a siding agreement upon the terms and in the form hereto annexed, it being further understood and agreed between the parties hereto that notwithstanding anything herein or in said siding agreement contained the Commission, in the event of its leasing other mill sites north of the lands hereby demised to other parties, shall have the right to provide such other parties with railway siding accommodation through the lands hereby demised to the Lessees, PROVIDED that the use of such railway siding accommodation by such other parties shall not unreasonably interfere with the business of the Lessees.

It is agreed that on the termination of this lease the Lessees may within three months thereafter remove all plant, machinery, buildings and erections built or placed upon the said lands otherwise the same shall become the property of the Commission.

IN WITNESS WHEREOF the Commission has hereunto affixed its corporate seal under the hands of its proper officers in that behalf and the Lessees have hereunto set their hands and seals.

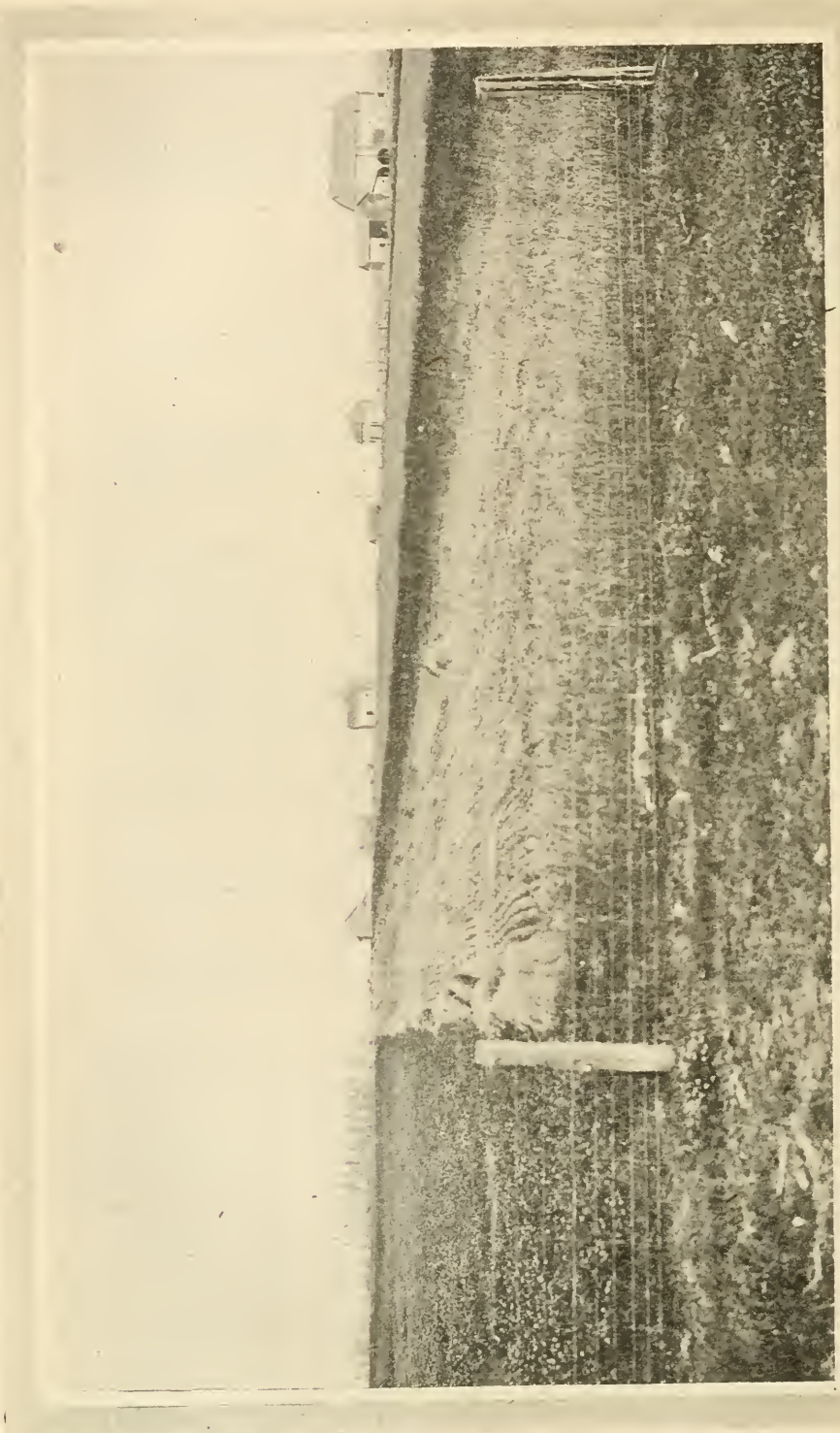
SIGNED, SEALED AND DELIVERED

In the presence of:
FRED. A. DAY.

A. B. ODLUM.

M. J. CONKEY.
W. J. MURPHY.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.
J. L. ENGLEHART,
*Chairman.*
(Seal.)
W. H. MAUND,
*Secretary-Treasurer.*



Farm of Mr. Wm. Carr, Township of Armstrong.

# NIPISSING CENTRAL RAILWAY

## ANNUAL REPORT CHIEF ENGINEER AND SUPERINTENDENT OF MAINTENANCE, NIPISSING CENTRAL RAILWAY.

Year ended October 31st, 1916.

North Bay, Ontario, December 7th, 1916.

W. H. Maund, Esq.,

*Secretary-Treasurer,*

Toronto, Ontario.

Dear Sir,—I beg to submit my annual report, as Chief Engineer and Superintendent of Maintenance, for the fiscal year ended October 31st, 1916.

### Mileage.

The mileage now operated is as follows:—

*Main Track:*

| | | |
|---|---|---|
| Owned and maintained by Company .... | 4.92 miles | |
| Lease from T. & N. O. Rly. Commission: | | |
| Maintained by Company ..... | 5.28 miles | |
| Maintained by Commission ..... | 5.17 miles | |
| | | 15.37 miles |

*Sidings and Spurs:*

| | | |
|---|---|---|
| Sidings on that part of the line owned by T. & N. O. Commission: | | |
| Yard Tracks and Sidings ..... | 1.65 miles | |
| Private Sidings ..... | 1.16 miles | |
| | | 2.81 miles |
| Sidings on that part of the line owned by N. C. Rly.: | | |
| Company Spurs ..... | | 2.00 miles |
| Total Track ..... | | 20.18 miles |

### Equipment.

Rolling equipment consists of the following:

8 Electric Motor Passenger Cars.
1 Combination Switching Locomotive. Express Car and Snow Plow.
2 Freight Cars.

### Additions to Road and Equipment.

During the year a spur track was laid on to the new Government dock at Haileybury 500 feet long and a private siding was installed for the Right-of-Way Mines at Cobalt 262 feet long.

No additions to the rolling stock during the year.

### Maintenance.

The property of the railway, including roadbed, track, buildings, electrical equipment and rolling stock has all been maintained in good condition.

### Accidents.

The only accident occurring on the Nipissing Central Railway during the year was:

January 30th, 1916. Harry Andrews, line foreman, North Cobalt, while operating snow plow caught the thumb of his left hand in piston of plow and it was necessary to amputate it at the first joint.

Respectfully submitted,

S. B. CLEMENT.

## GENERAL BALANCE SHEET

### ASSETS.

| | | |
|---|---|---|
| **Property Owned:** | | |
| Cost of Road as of Oct. 31, 1915 | $298,815 70 | |
| " for year ended Oct. 31, 1916 | 7,522 42 | |
| | | $306,338 12 |
| Cost of Equipment as of Oct. 31, 1915 | $74,290 98 | |
| " " for year ended Oct. 31, 1916 | | 74,290 98 |
| Townsite Property—North Cobalt | | 242,700 20 |
| **Working Assets:** | | |
| Cash | $25,316 72 | |
| Accounts Collectible | 6,957 06 | |
| Balance due on Townsite Sales | 8,777 82 | |
| Bills Receivable | 157 36 | |
| Balance due from Agents and Conductors | 158 91 | |
| Material on hand | 4,015 66 | |
| | | 45,383 53 |
| **Deferred Debit Items:** | | |
| Insurance paid in advance | $35 39 | |
| Accounts in Suspense | 2,028 74 | |
| | | 2,064 13 |
| **Other Assets:** | | |
| Franchise | | 141,383 32 |
| | | $812,160 28 |

### LIABILITIES.

| | | |
|---|---|---|
| Capital Stock | | $530,000 00 |
| T. & N. O. Ry. Advance | | 247,639 50 |
| **Working Liabilities:** | | |
| Accounts Payable | $32,974 84 | |
| Unclaimed Wages | 126 51 | |
| | | 33,101 35 |
| **Deferred Credit Items:** | | |
| War Tax | | 4 30 |
| **Free Surplus:** | | |
| Profit and Loss Balance | | 1,415 13 |
| | | $812,160 28 |

## PROFIT AND LOSS.

| | | | |
|---|---|---|---|
| Townsites | $2,659 35 | By Balance—October 31, 1915 | $1,877 03 |
| Paid T. N. O. Ry. Commission | 20,000 00 | Revenue for year ended October 31, 1916 | 22,197 45 |
| Balance carried forward | 1,415 13 | | |
| | $24,074 48 | | $24,074 48 |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures

| No. | RECEIPTS | Per cent. | 1914 November | Per cent. | 1915 November |
|---|---|---|---|---|---|
| | I. REVENUE FROM TRANSPORTATION— | | $ c. | | $ c. |
| 101 | Passenger Revenue | ..... | 7,516 90 | ..... | 6,830 10 |
| 102 | Baggage Revenue | ..... | 35 05 | ..... | 17 25 |
| 103 | Parlor, Sleeping, Dining, and Special Car Revenue | ..... | 21 00 | ..... | 10 00 |
| 104 | Mail Revenue | ..... | ..... | ..... | ..... |
| 105 | Express Revenue | ..... | ..... | ..... | ..... |
| 106 | Milk Revenue | ..... | 27 30 | ..... | 23 55 |
| 107 | Freight Revenue | ..... | 420 38 | ..... | 315 71 |
| 108 | Switching Revenue | ..... | 580 29 | ..... | 783 96 |
| 109 | Miscellaneous Transportation Revenue | ..... | ..... | ..... | ..... |
| | Total | ..... | 8,600 92 | ..... | 7,980 57 |
| | II. REVENUE FROM OTHER RAILWAY OPERATIONS— | | | | |
| 110 | Station and Car Privileges | ..... | ..... | ..... | ..... |
| 111 | Parcel Room Receipts | ..... | ..... | ..... | ..... |
| 112 | Storage | ..... | ..... | ..... | ..... |
| 113 | Demurrage | ..... | 49 00 | ..... | 15 00 |
| 114 | Telephone and Telegraph Service | ..... | ..... | ..... | ..... |
| 115 | Rent of Tracks and Facilities | ..... | ..... | ..... | ..... |
| 116 | Rent of Equipment | ..... | ..... | ..... | ..... |
| 117 | Rent of Buildings and other Property | ..... | ..... | ..... | 128 00 |
| 118 | Power | ..... | ..... | ..... | ..... |
| 119 | Miscellaneous | ..... | ..... | ..... | ..... |
| | Total | ..... | 49 00 | ..... | 143 00 |
| | TOTAL REVENUE | ..... | 8,649 92 | ..... | 8,123 57 |
| | EXPENDITURES | | | | |
| 1 | Way and Structures | 15.2 | 1,314 31 | 11.6 | 943 02 |
| 2 | Equipment | 4.8 | 414 04 | 3.6 | 294 87 |
| 3 | Power | 18.5 | 1,599 50 | 18. | 1,462 16 |
| 4 | Conducting Transportation | 26.4 | 2,282 59 | 29.5 | 2,392 43 |
| 5 | Traffic | .6 | 48 80 | .3 | 28 00 |
| 6 | General and Miscellaneous | 15.2 | 1,318 62 | 6.8 | 552 21 |
| 7 | Transportation for Investment—Cr. | ..... | ..... | ..... | ..... |
| | TOTAL OPERATING EXPENSES | 80.7 | 6,977 86 | 69.8 | 5,672 69 |
| | BALANCE | ..... | 1,672 06 | ..... | 2,450 88 |
| | OTHER INCOME— | | | | |
| | Interes | ..... | ..... | ..... | 55 60 |
| | Total | ..... | 1,672 06 | ..... | 2,506 48 |
| | DEDUCTIONS FROM INCOME— | | | | |
| | Rent for Leased Road | ..... | ..... | ..... | 1,205 33 |
| | Taxes | ..... | 27 19 | ..... | ..... |
| | NET RESULT | ..... | 1,644 87 | ..... | 1,301 15 |

## RAILWAY

by Months, November, 1914, to October, 1916.

| Per Cent. | 1914 December | Per Cent. | 1915 December | Per cent. | 1915 January | Per Cent. | 1916 January | No. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | | $ c. | | $ c. | | $ c. | |
| ..... | 7,775 75 | ..... | 7,239 05 | ..... | 7,121 33 | ..... | 6,435 50 | 101 |
| ..... | 31 25 | ..... | 19 25 | ..... | 24 25 | ..... | 16 00 | 102 |
| ..... | 39 00 | ..... | 10 00 | ..... | 25 00 | ..... | 55 00 | 103 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 104 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 105 |
| ..... | 27 10 | ..... | 28 13 | ..... | 14 06 | ..... | 18 04 | 106 |
| ..... | 398 48 | ..... | 465 57 | ..... | 731 12 | ..... | ..... | 107 |
| ..... | 555 30 | ..... | 791 12 | ..... | 394 01 | ..... | 1,382 43 | 108 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 109 |
| ..... | 8,826 88 | ..... | 8,553 12 | ..... | 8,309 77 | ..... | 7,906 97 | |
| ..... | ..... | ..... | 44 86 | ..... | 65 83 | ..... | 25 | 110 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 111 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 112 |
| ..... | 84 00 | ..... | 34 00 | ..... | 42 00 | ..... | 17 00 | 113 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 114 |
| ..... | ..... | ..... | ..... | ..... | 186 00 | ..... | ..... | 115 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 116 |
| ..... | ..... | ..... | 35 00 | ..... | ..... | ..... | ..... | 117 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 118 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119 |
| ..... | 84 00 | ..... | 113 85 | ..... | 293 83 | ..... | 17 25 | |
| ..... | 8,910 88 | ..... | 8,666 98 | ..... | 8,603 60 | ..... | 7,924 22 | |
| | | | | | | | | |
| 15.3 | 1,362 67 | 8.9 | 773 59 | 8.5 | 732 16 | 12.3 | 973 32 | 1 |
| 6.6 | 587 12 | 5.2 | 445 82 | 8.1 | 699 19 | 6.2 | 488 62 | 2 |
| 20.8 | 1,855 48 | 17.8 | 1,542 57 | 23. | 1,975 60 | 23.2 | 1,840 56 | 3 |
| 29.4 | 2,618 29 | 28.8 | 2,498 70 | 26.5 | 2,278 43 | 27.1 | 2,150 09 | 4 |
| .7 | 65 60 | .4 | 33 60 | .5 | 43 20 | .6 | 44 80 | 5 |
| Cr.2.1 | Cr. 184 72 | 7.2 | 626 22 | 5.1 | 435 76 | 7.3 | 582 90 | 6 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 7 |
| 70.7 | 6,304 44 | 68.3 | 5,920 50 | 71.7 | 6,164 34 | 76.7 | 6,080 29 | |
| ..... | 2,606 44 | ..... | 2,746 48 | ..... | 2,439 26 | ..... | 1,843 93 | |
| ..... | ..... | ..... | 41 85 | ..... | ..... | ..... | 55 90 | |
| ..... | 2,606 44 | ..... | 2,788 33 | ..... | 2,439 26 | ..... | 1,899 83 | |
| ..... | 1,209 18 | ..... | 1,143 82 | ..... | 604 58 | ..... | 1,156 80 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 1,397 26 | ..... | 1,644 51 | ..... | 1,834 68 | ..... | 743 03 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures

| No. | RECEIPTS. | Per cent. | 1915 February | Per cent. | 1916 February | Per cent. | 1915 March |
|---|---|---|---|---|---|---|---|
| | I. REVENUE FROM TRANSPORTATION— | | $ c. | | $ c. | | $ c. |
| 101 | Passenger Revenue | ..... | 6,537 20 | ..... | 6,084 00 | ..... | 7,484 25 |
| 102 | Baggage Revenue | ..... | 23 00 | ..... | 22 75 | ..... | 25 75 |
| 103 | Parlor, Sleeping, Dining and Special Car Revenue | ..... | 65 00 | ..... | 40 00 | ..... | 20 00 |
| 104 | Mail Revenue | ..... | ..... | ..... | ..... | ..... | ..... |
| 105 | Express Revenue | ..... | ..... | ..... | ..... | ..... | ..... |
| 106 | Milk Revenue | ..... | 08 | ..... | 5 17 | ..... | 53 |
| 107 | Freight Revenue | ..... | 617 08 | ..... | ..... | ..... | 655 32 |
| 108 | Switching Revenue | ..... | 195 59 | ..... | 1,590 95 | ..... | 401 37 |
| 109 | Miscellaneous Transportation Revenue | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 7,437 95 | ..... | 7,742 87 | ..... | 8,587 22 |
| | II. REVENUE FROM OTHER RAILWAY OPERATIONS— | | | | | | |
| 110 | Station and Car Privileges | ..... | 65 84 | ..... | ..... | ..... | 46 10 |
| 111 | Parcel Room Receipts | ..... | ..... | ..... | ..... | ..... | ..... |
| 112 | Storage | ..... | ..... | ..... | ..... | ..... | ..... |
| 113 | Demurrage | ..... | 57 00 | ..... | 49 00 | ..... | 142 00 |
| 114 | Telephone and Telegraph Service | ..... | ..... | ..... | ..... | ..... | ..... |
| 115 | Rent of Tracks and Facilities | ..... | ..... | ..... | ..... | ..... | ..... |
| 116 | Rent of Equipment | ..... | ..... | ..... | ..... | ..... | ..... |
| 117 | Reut of Buildings and other Property | ..... | ..... | ..... | ..... | ..... | ..... |
| 118 | Power | ..... | ..... | ..... | ..... | ..... | ..... |
| 119 | Miscellaneous | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 122 84 | ..... | 49 00 | ..... | 188 10 |
| | TOTAL REVENUE | ..... | 7,560 79 | ..... | 7,791 87 | ..... | 8,775 32 |
| | EXPENDITURES. | | | | | | |
| 1 | Way and Structures | 16.2 | 1,227 25 | 12.4 | 969 84 | 14.3 | 1,251 81 |
| 2 | Equipment | 8.6 | 649 86 | 4.9 | 379 54 | 6.8 | 595 30 |
| 3 | Power | 25.2 | 1,901 15 | 23.5 | 1,827 89 | 19.2 | 1,683 22 |
| 4 | Conducting Transportation | 32.5 | 2,459 14 | 25.2 | 1,960 56 | 26.3 | 2,308 76 |
| 5 | Traffic | .2 | 11 20 | .2 | 13 96 | ..... | ..... |
| 6 | General and Miscellaneous | 8.0 | 608 52 | 7.1 | 556 37 | 8.1 | 715 40 |
| 7 | Transportation for Investment—Cr. | ..... | ..... | ..... | ..... | ..... | ..... |
| | TOTAL OPERATING EXPENSES | 90.7 | 6,857 12 | 73.3 | 5,708 16 | 74.7 | 6,554 49 |
| | BALANCE | ..... | 703 67 | ..... | 2,083 71 | ..... | 2,220 83 |
| | OTHER INCOME— Interest | ..... | ..... | ..... | 45 85 | ..... | ..... |
| | Total | ..... | 703 67 | ..... | 2,129 56 | ..... | 2,220 83 |
| | DEDUCTIONS FROM INCOME— Rent for Leased Road | ..... | 604 58 | ..... | 1,155 25 | ..... | 604 58 |
| | Taxes | ..... | ..... | ..... | ..... | ..... | ..... |
| | NET RESULT | ..... | 99 09 | ..... | 974 31 | ..... | 1,616 25 |

## RAILWAY.

by months, November, 1914, to October, 1916.—Continued.

| Per cent. | 1916 March | Per cent. | 1915 April | Per cent. | 1916 April | Per cent. | 1915 May | No. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | | $ c. | | $ c. | | $ c. | |
| ..... | 7,379 81 | ..... | 7,739 65 | ..... | 8,218 90 | ..... | 8,006 00 | 101 |
| ..... | 14 90 | ..... | 36 75 | ..... | 46 75 | ..... | 57 25 | 102 |
| ..... | 55 00 | ..... | 60 00 | ..... | 10 00 | ..... | 30 00 | 103 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 104 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 105 |
| ..... | 4 49 | ..... | 23 03 | ..... | 20 49 | ..... | 34 43 | 106 |
| ..... | ..... | ..... | 364 04 | ..... | ..... | ..... | 302 88 | 107 |
| ..... | 1,464 38 | ..... | 523 12 | ..... | 1,251 92 | ..... | 552 53 | 108 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 109 |
| ..... | 8,918 58 | ..... | 8,746 59 | ..... | 9,548 06 | ..... | 8,983 09 | |
| ..... | 250 00 | ..... | 59 25 | ..... | ..... | ..... | 6 38 | 110 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 111 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 112 |
| ..... | 176 00 | ..... | 76 00 | ..... | 48 00 | ..... | 45 00 | 113 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 114 |
| ..... | ..... | ..... | Dr. 46 00 | ..... | ..... | ..... | ..... | 115 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 116 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 117 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 118 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119 |
| ..... | 426 00 | ..... | 89 25 | ..... | 48 00 | ..... | 51 38 | |
| ..... | 9,344 58 | ..... | 8,835 84 | ..... | 9,596 06 | ..... | 9,034 47 | |
| | | | | | | | | |
| 11.4 | 1,060 43 | 11.3 | 996 06 | 7.5 | 720 79 | 9.1 | 821 15 | 1 |
| 5.8 | 543 11 | 6.1 | 540 74 | 3.5 | 338 19 | 6.8 | 613 13 | 2 |
| 18.2 | 1,702 18 | 16.2 | 1,433 26 | 15. | 1,436 75 | 15.6 | 1,408 66 | 3 |
| 27.6 | 2,582 89 | 29.7 | 2,622 72 | 28.4 | 2,727 04 | 24. | 2,172 15 | 4 |
| 1. | 92 28 | .7 | 57 40 | .6 | 53 08 | .8 | 75 79 | 5 |
| 10.2 | 955 19 | 9.2 | 814 98 | 10.4 | 1,002 68 | 12.9 | 1,162 47 | 6 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 7 |
| 74.2 | 6,936 08 | 73.2 | 6,465 16 | 65.4 | 6,278 53 | 69.2 | 6,253 35 | |
| ..... | 2,408 50 | ..... | 2,370 68 | ..... | 3,317 53 | ..... | 2,781 12 | |
| ..... | 19 35 | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 2,427 85 | ..... | 2,370 68 | ..... | 3,317 53 | ..... | 2,781 12 | |
| ..... | 1,150 88 | ..... | 604 58 | ..... | 1,179 04 | ..... | 604 58 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 1,276 97 | ..... | 1,766 10 | ..... | 2,138 49 | ..... | 2,176 54 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures

| No. | RECEIPTS | Per cent. | 1916 May | Per cent. | 1915 June | Per cent. | 1916 June |
|---|---|---|---|---|---|---|---|
| | I. REVENUE FROM TRANSPORTATION— | | $ c. | | $ c. | | $ c. |
| 101 | Passenger Revenue | | 8,597 30 | | 8,029 27 | | 8,959 55 |
| 102 | Baggage Revenue | | 42 00 | | 53 25 | | 58 75 |
| 103 | Parlor, Sleeping, Dining, and Special Car Revenue | | 70 00 | | 60 00 | | 40 00 |
| 104 | Mail Revenue | | | | | | |
| 105 | Express Revenue | | | | | | |
| 106 | Milk Revenue | | 9 75 | | 9 15 | | 5 64 |
| 107 | Freight Revenue | | | | 259 27 | | |
| 108 | Switching Revenue | | 852 89 | | 680 30 | | 886 60 |
| 109 | Miscellaneous Transportation Revenue | | | | | | |
| | Total | | 9,571 94 | | 9,091 24 | | 9,950 54 |
| | II. REVENUE FROM OTHER RAILWAY OPERATIONS— | | | | | | |
| 110 | Station and Car Privileges | | | | 29 07 | | |
| 111 | Parcel Room Receipts | | | | | | |
| 112 | Storage | | | | | | |
| 113 | Demurrage | | 68 00 | | 58 00 | | 16 00 |
| 114 | Telephone and Telegraph Service | | | | | | |
| 115 | Rent of Tracks and Facilities | | | | | | |
| 116 | Rent of Equipment | | | | | | |
| 117 | Rent of Buildings and other Property | | | | | | |
| 118 | Power | | | | | | |
| 119 | Miscellaneous | | | | | | |
| | Total | | 68 00 | | 87 07 | | 16 00 |
| | TOTAL REVENUE | | 9,639 94 | | 9,178 31 | | 9,966 54 |
| | EXPENDITURES | | | | | | |
| 1 | Way and Structures | 9.8 | 945 86 | 9.9 | 907 30 | 9.4 | 937 55 |
| 2 | Equipment | 4.5 | 432 15 | 2.8 | 261 64 | 4.6 | 460 72 |
| 3 | Power | 15.8 | 1,522 55 | 15.5 | 1,420 65 | 14.4 | 1,435 80 |
| 4 | Conducting Transportation | 24.1 | 2,323 31 | 23.4 | 2,143 68 | 23.3 | 2,323 17 |
| 5 | Traffic | .6 | 57 63 | .4 | 33 60 | .5 | 51 73 |
| 6 | General and Miscellaneous | 9.3 | 898 99 | 7.7 | 713 99 | 11.6 | 1,155 89 |
| 7 | Transportation for Investment—Cr. | | | | | | |
| | TOTAL OPERATING EXPENSES | 64.1 | 6,180 49 | 59.7 | 5,480 86 | 63.8 | 6,364 86 |
| | BALANCE | | 3,459 45 | | 3,697 45 | | 3,601 68 |
| | OTHER INCOME— Interest | | 79 60 | | | | |
| | | | 3,539 05 | | 3,697 45 | | 3,601 68 |
| | DEDUCTIONS FROM INCOME— Rent for Leased Road | | 1,144 52 | | 604 58 | | 1,150 58 |
| | Taxes | | | | | | |
| | NET RESULT | | 2,394 53 | | 3,092 87 | | 2,451 10 |

## RAILWAY.

by Months, November, 1914, to October, 1916.—Continued.

| Per cent. | 1915 July | Per cent. | 1916 July | Per cent. | 1915 August | Per cent. | 1916 August | No. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | | $ c. | | $ c. | | $ c. | |
| ..... | 8,965 10 | ..... | 9,374 25 | ..... | 7,992 92 | ..... | 9,538 20 | 101 |
| ..... | 77 50 | ..... | 81 75 | ..... | 49 50 | ..... | 92 50 | 102 |
| ..... | 40 00 | ..... | 30 00 | ..... | 35 00 | ..... | 135 00 | 103 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 104 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 105 |
| ..... | 16 | ..... | 4 60 | ..... | 38 | ..... | 6 05 | 106 |
| ..... | 188 02 | ..... | ..... | ..... | 323 16 | ..... | ..... | 107 |
| ..... | 1,009 61 | ..... | 896 96 | ..... | 1,041 29 | ..... | 895 26 | 108 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 109 |
| ..... | 10,280 39 | ..... | 10,387 56 | ..... | 9,442 25 | ..... | 10,667 01 | |
| ..... | 14 28 | ..... | 125 00 | ..... | 42 38 | ..... | ..... | 110 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 111 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 112 |
| ..... | 1 00 | ..... | 45 00 | ..... | 2 00 | ..... | 94 50 | 113 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 114 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 115 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 116 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 117 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 118 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119 |
| ..... | 15 28 | ..... | 170 00 | ..... | 44 38 | ..... | 94 50 | |
| ..... | 10,295 67 | ..... | 10,557 56 | ..... | 9,486 63 | ..... | 10,761 51 | |
| | | | | | | | | |
| 9.8 | 1,006 73 | 10.5 | 1,113 46 | 10.5 | 996 02 | 7.9 | 856 81 | 1 |
| 2.9 | 302 34 | 3.2 | 333 75 | 2.7 | 256 81 | 3.6 | 377 55 | 2 |
| 14.1 | 1,447 50 | 13.9 | 1,470 25 | 15.8 | 1,499 65 | 14.0 | 1,507 70 | 3 |
| 22.9 | 2,360 53 | 22.5 | 2,371 91 | 22.2 | 2,108 73 | 22.4 | 2,421 73 | 4 |
| .3 | 28 00 | .4 | 47 48 | .5 | 49 20 | .1 | 13 88 | 5 |
| 6.4 | 665 60 | 8.7 | 914 15 | 8.7 | 820 62 | 10.4 | 1,127 51 | 6 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 7 |
| 56.4 | 5,810 70 | 59.2 | 6,251 00 | 60.4 | 5,731 03 | 58.5 | 6,305 18 | |
| ..... | 4,484 97 | ..... | 4,306 56 | ..... | 3,755 60 | ..... | 4,456 33 | |
| ..... | ..... | ..... | 57 55 | ..... | 16 45 | ..... | 42 25 | |
| ..... | 4,484 97 | ..... | 4,364 11 | ..... | 3,772 05 | ..... | 4,498 58 | |
| ..... | 604.58 | ..... | 1,176 35 | ..... | 604 58 | ..... | 1,187 50 | |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | |
| ..... | 3,880 39 | ..... | 3,187 76 | ..... | 3,167 47 | ..... | 3,311 08 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures

| No. | RECEIPTS | Per cent. | 1915 September | Per cent. | 1916 September | Per cent. | 1915 October |
|---|---|---|---|---|---|---|---|
| | I. REVENUE FROM TRANSPORTATION— | | $ c. | | $ c. | | $ c. |
| 101 | Passenger Revenue | ..... | 7,160 85 | ..... | 8,617 07 | ..... | 7,293 30 |
| 102 | Baggage Revenue | ..... | 40 50 | ..... | 49 00 | ..... | 28 00 |
| 103 | Parlor, Sleeping, Dining and Special Car Revenue | ..... | 30 00 | ..... | 35 00 | ..... | 45 00 |
| 104 | Mail Revenue | ..... | ..... | ..... | ..... | ..... | ..... |
| 105 | Express Revenue | ..... | ..... | ..... | ..... | ..... | ..... |
| 106 | Milk Revenue | ..... | 3 00 | ..... | 7 24 | ..... | 9 00 |
| 107 | Freight Revenue | ..... | 353 47 | ..... | ..... | ..... | 261 01 |
| 108 | Switching Revenue | ..... | 961 63 | ..... | 1,019 30 | ..... | 966 43 |
| 109 | Miscellaneous Transportation Revenue | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 8,549 45 | ..... | 9,727 61 | ..... | 8,602 74 |
| | II. REVENUE FROM OTHER RAILWAY OPERATIONS— | | | | | | |
| 110 | Station and Car Privileges | ..... | 18 00 | ..... | 125 00 | ..... | 152 00 |
| 111 | Parcel Room Receipts | ..... | ..... | ..... | ..... | ..... | ..... |
| 112 | Storage | ..... | ..... | ..... | ..... | ..... | ..... |
| 113 | Demurrage | ..... | 42 00 | ..... | 86 00 | ..... | 15 00 |
| 114 | Telephone and Telegraph Service | ..... | ..... | ..... | ..... | ..... | ..... |
| 115 | Rent of Tracks and Facilities | ..... | ..... | ..... | ..... | ..... | ..... |
| 116 | Rent of Equipment | ..... | ..... | ..... | ..... | ..... | ..... |
| 117 | Rent of Buildings and other Property | ..... | ..... | ..... | ..... | ..... | ..... |
| 118 | Power | ..... | ..... | ..... | ..... | ..... | ..... |
| 119 | Miscellaneous | ..... | ..... | ..... | ..... | ..... | ..... |
| | Total | ..... | 60 00 | ..... | 211 00 | ..... | 167 00 |
| | TOTAL REVENUE | ..... | 8,609 45 | ..... | 9,938 61 | ..... | 8,769 74 |
| | EXPENDITURES | | | | | | |
| 1 | Way and Structures | 9.9 | 855 83 | 9.1 | 907 34 | 10.3 | 905 92 |
| 2 | Equipment | 5.2 | 443 76 | 4.1 | 406 88 | 1.7 | 145 21 |
| 3 | Power | 17.2 | 1,475 25 | 16.9 | 1,683 88 | 28.3 | 2,484 43 |
| 4 | Conducting Transportation | 24. | 2,065 44 | 22.7 | 2,250 45 | 23.9 | 2,096 10 |
| 5 | Traffic | .3 | 28 00 | .4 | 41 88 | .4 | 33 60 |
| 6 | General and Miscellaneous | 8.8 | 760 20 | 9.1 | 900 66 | 7.5 | 658 37 |
| 7 | Transportation for Investment—Cr. | ..... | ..... | ..... | ..... | ..... | ..... |
| | TOTAL OPERATING EXPENSES | 65.4 | 5,628 48 | 62.3 | 6,191 09 | 72.1 | 6,323 63 |
| | BALANCE | ..... | 2,980 97 | ..... | 3,747 52 | ..... | 2,446 11 |
| | OTHER INCOME— Interest | ..... | 92 90 | ..... | 45 67 | ..... | 108 65 |
| | Total | ..... | 3,073 87 | ..... | 3,793 19 | ..... | 2,554 76 |
| | DEDUCTIONS FROM INCOME— Rent for Leased Road | ..... | 604 58 | ..... | 1,170 46 | ..... | 604 58 |
| | Taxes | ..... | ..... | ..... | ..... | ..... | ..... |
| | NET RESULT | ..... | 2,469 29 | ..... | 2,622 73 | ..... | 1,950 18 |

## RAILWAY.

by Months, November, 1914, to October, 1916—Continued.

| Per cent. | 1916 October | Per cent. | 1915 Total | Per cent. | 1916 Total | Increase | Decrease | No. |
|---|---|---|---|---|---|---|---|---|
| | $ c. | | $ c. | | $ c. | $ c. | $ c. | |
| ..... | 6,981 71 | ..... | 91,622 52 | ..... | 94,255 44 | 2,632 92 | ..... | 101 |
| ..... | 33 75 | ..... | 482 05 | ..... | 494 65 | 12 60 | ..... | 102 |
| ..... | 20 00 | ..... | 470 00 | ..... | 510 00 | 40 00 | ..... | 103 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 104 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 105 |
| ..... | 24 02 | ..... | 148 22 | ..... | 157 17 | 8 95 | ..... | 106 |
| ..... | ..... | ..... | 4,874 23 | ..... | 781 28 | ..... | 4,092 95 | 107 |
| ..... | 923 03 | ..... | 7,861 47 | ..... | 12,738 80 | 4,877 33 | ..... | 108 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 109 |
| ..... | 7,982 51 | ..... | 105,458 49 | ..... | 108,937 34 | 3,478 85 | ..... | |
| ..... | ..... | ..... | 499 13 | ..... | 545 11 | 45 98 | ..... | 110 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 111 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 112 |
| ..... | 71 00 | ..... | 613 00 | ..... | 719 50 | 106 50 | ..... | 113 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 114 |
| ..... | 33 00 | ..... | 140 00 | ..... | 33 00 | ..... | 107 00 | 115 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 116 |
| ..... | ..... | ..... | ..... | ..... | 163 00 | 163 00 | ..... | 117 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 118 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119 |
| ..... | 104 00 | ..... | 1,252 13 | ..... | 1,460 61 | 208 48 | ..... | |
| ..... | 8,086 51 | ..... | 106,710 62 | ..... | 110,397 95 | 3,687 33 | ..... | |
| 12.9 | 1,046 73 | 11.6 | 12,377 21 | 10.2 | 11,248 74 | ..... | 1,128 47 | 1 |
| 6.1 | 496 91 | 5.2 | 5,509 14 | 4.5 | 4,998 11 | ..... | 511 03 | 2 |
| 13.9 | 1,123 78 | 18.9 | 20,184 35 | 16.8 | 18,556 07 | ..... | 1,628 28 | 3 |
| 34.9 | 2,819 27 | 25.8 | 27,516 56 | 26.1 | 28,821 55 | 1,304 99 | ..... | 4 |
| .7 | 53 08 | .4 | 474 39 | .5 | 531 40 | 57 01 | ..... | 5 |
| 16.2 | 1,305 99 | 8. | 8,489 81 | 9.6 | 10,578 76 | 2,088 95 | ..... | 6 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 7 |
| 84.7 | 6,845 76 | 69.9 | 74,551 46 | 67.7 | 74,734 63 | 183 17 | ..... | |
| ..... | 1,240 75 | ..... | 32,159 16 | ..... | 35,663 32 | 3,504 16 | ..... | |
| ..... | 56 33 | ..... | 218 00 | ..... | 499 95 | 281 95 | ..... | |
| ..... | 1,297 08 | ..... | 32,377 16 | ..... | 36,163 27 | 3,786 11 | ..... | |
| ..... | 1,145 29 | ..... | 7,254 98 | ..... | 13,965 82 | 6,710 84 | ..... | |
| ..... | ..... | ..... | 27 19 | ..... | ..... | ..... | 27 19 | |
| ..... | 151 79 | ..... | 25,094 99 | ..... | 22,197 45 | ..... | 2,897 54 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures, by

| No. | Maintenance of Way and Structures. | 1914 November | 1915 November | 1914 December | 1915 December |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 1 | Superintendence of way and structures | 32 00 | 16 00 | 32 00 | 16 00 |
| 2 | Ballast | 15 22 | 14 00 | 28 00 | 14 00 |
| 3 | Ties | ..... | 231 67 | 79 34 | 39 67 |
| 4 | Rails | ..... | 51 33 | 102 66 | 51 33 |
| 5 | Rail fastenings and joints | ..... | 9 37 | 9 34 | 4 67 |
| 6 | Special work | 22 39 | 4 67 | 9 34 | 4 67 |
| 7 | Underground construction | ..... | ..... | ..... | ..... |
| 8 | Track and roadway labor | 450 88 | 352 49 | 506 15 | 178 60 |
| 9 | Miscellaneous track and roadway expenses | 2 87 | 6 40 | 11 55 | 3 37 |
| 10 | Paving | 22 79 | 25 57 | ..... | ..... |
| 11 | Cleaning and sanding track | 17 10 | 15 48 | 14 25 | 2 58 |
| 12 | Removal of snow and ice | 51 81 | 64 38 | 279 15 | 321 76 |
| 13 | Tunnels and subways | ..... | ..... | ..... | ..... |
| 14 | Elevated structures and foundations | ..... | ..... | ..... | ..... |
| 15 | Bridges, trestles and culverts | ..... | ..... | ..... | ..... |
| 16 | Crossings, fences and signs | 24 86 | 25 89 | 7 97 | 1 94 |
| 17 | Signal and interlocking apparatus | ..... | ..... | ..... | ..... |
| 18 | Telephone and telegraph lines | 28 00 | 25 00 | 24 49 | 25 00 |
| 19 | Miscellaneous way expenses | ..... | ..... | ..... | ..... |
| 20 | Poles and fixtures | 130 50 | 49 00 | 65 00 | 52 00 |
| 21 | Underground conduits | ..... | ..... | ..... | ..... |
| 22 | Distribution system | 160 40 | 49 00 | 111 39 | 58 00 |
| 23 | Miscellaneous electric line expenses | ..... | ..... | ..... | ..... |
| 24 | Buildings, fixtures and grounds | 355 49 | 2 77 | 82 04 | ..... |
| 25 | Depreciation of way and structures | ..... | ..... | ..... | ..... |
| 26 | Other operations—Dr. | ..... | ..... | ..... | ..... |
| 27 | Other operations—Cr. | ..... | ..... | ..... | ..... |
| 28 | Equalization—way and structures | ..... | ..... | ..... | ..... |
| | Total | 1,314 31 | 943 02 | 1,362 67 | 773 59 |
| No. | Maintenance of Equipment. | | | | |
| 29 | Superintendence of equipment | 32 00 | 20 50 | 36 50 | 16 00 |
| 30 | Passenger and combination cars | 179 40 | 209 54 | 304 32 | 373 86 |
| 31 | Freight, express and mail cars | ..... | ..... | ..... | ..... |
| 32 | Service equipment | ..... | ..... | ..... | ..... |
| 33 | Electric equipment of cars | 199 77 | 51 51 | 226 33 | 42 89 |
| 34 | Locomotives | ..... | ..... | ..... | ..... |
| 35 | Floating equipment | ..... | ..... | ..... | ..... |
| 36 | Shop equipment | ..... | ..... | ..... | ..... |
| 37 | Shop expenses | 2 87 | 13 32 | 19 97 | 13 07 |
| 38 | Vehicles and horses | ..... | ..... | ..... | ..... |
| 39 | Miscellaneous equipment expenses | ..... | ..... | ..... | ..... |
| 40 | Depreciation of equipment | ..... | ..... | ..... | ..... |
| 41 | Equipment retired | ..... | ..... | ..... | ..... |
| 42 | Other operations—Dr. | ..... | ..... | ..... | ..... |
| 43 | Other operations—Cr. | ..... | ..... | ..... | ..... |
| 44 | Equalization—equipment | ..... | ..... | ..... | ..... |
| | Total | 414 04 | 294 87 | 587 12 | 445 82 |

## RAILWAY.

Months, November, 1914, to October, 1916—Continued.

| 1915 January | 1916 January | 1915 February | 1916 February | 1915 March | 1916 March | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 32 00 | 17 00 | 16 00 | 36 48 | 16 00 | 36 44 | 1 |
| 14 00 | 134 19 | 14 00 | 14 00 | 14 00 | 14 00 | 2 |
| 39 67 | 39 67 | 39 67 | 39 67 | 39 67 | 39 67 | 3 |
| 51 33 | 51 33 | 51 33 | 51 33 | 51 33 | 51 33 | 4 |
| 4 67 | 4 67 | 4 67 | 4 67 | 21 49 | 4 67 | 5 |
| 4 67 | 4 67 | 4 67 | 4 67 | 117 31 | 4 67 | 6 |
| | | | | | | 7 |
| 238 72 | 147 80 | 270 01 | 148 94 | 330 94 | 181 83 | 8 |
| 6 18 | 3 37 | 4 57 | 3 13 | 3 58 | 3 13 | 9 |
| | | | | | | 10 |
| | | | | 6 65 | | 11 |
| 354 59 | 478 68 | 323 02 | 600 20 | 211 99 | 642 59 | 12 |
| | | | | | | 13 |
| | | | | | | 14 |
| | | 137 44 | | | | 15 |
| | | | | | | 16 |
| | | | | | | 17 |
| 34 00 | 28 50 | 21 00 | 18 75 | 18 00 | 10 00 | 18 |
| | | | | | | 19 |
| 67 87 | 25 85 | 59 16 | 24 00 | 75 00 | 21 25 | 20 |
| | | | | | | 21 |
| 124 00 | 37 34 | 77 00 | 24 00 | 174 17 | 50 50 | 22 |
| | | | | | | 23 |
| Cr. 239 54 | 25 | 204 71 | | 171 68 | 35 | 24 |
| | | | | | | 25 |
| | | | | | | 26 |
| | | | | | | 27 |
| | | | | | | 28 |
| 732 16 | 973 32 | 1,227 25 | 969 84 | 1,251 81 | 1,060 43 | |
| | | | | | | |
| 58 10 | 17 00 | 16 00 | 22 60 | 16 00 | 22 55 | 29 |
| 488 69 | 351 06 | 481 42 | 221 89 | 492 58 | 319 37 | 30 |
| | | | | | | 31 |
| | | | | | | 32 |
| 127 31 | 110 70 | 131 18 | 131 63 | 74 71 | 193 79 | 33 |
| | | | | | | 34 |
| | | | | | | 35 |
| | | | | | | 36 |
| 25 09 | 9 86 | 21 26 | 3 42 | 12 01 | 7 40 | 37 |
| | | | | | | 38 |
| | | | | | | 39 |
| | | | | | | 40 |
| | | | | | | 41 |
| | | | | | | 42 |
| | | | | | | 43 |
| | | | | | | 44 |
| 699 19 | 488 62 | 649 86 | 379 54 | 595 30 | 543 11 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures,

| No. | Maintenance of Way and Structures. | 1915 April | 1916 April | 1915 May | 1916 May |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 1 | Superintendence of way and structures | 16 00 | 36 44 | 16 00 | 36 44 |
| 2 | Ballast | 14 00 | 14 00 | 14 00 | 14 00 |
| 3 | Ties | 39 67 | 39 67 | 39 67 | 39 67 |
| 4 | Rails | 51 33 | 51 33 | 51 33 | 51 33 |
| 5 | Rail fastenings and joints | 4 67 | 4 67 | 11 69 | 4 67 |
| 6 | Special work | 4 67 | 4 67 | 4 67 | 95 42 |
| 7 | Underground construction | ..... | ..... | ..... | ..... |
| 8 | Track and roadway labor | 407 01 | 367 67 | 489 02 | 498 51 |
| 9 | Miscellaneous track and roadway expenses | 3 77 | 4 79 | 3 13 | 3 13 |
| 10 | Paving | ..... | ..... | ..... | ..... |
| 11 | Cleaning and sanding track | 18 05 | ..... | 24 57 | 16 44 |
| 12 | Removal of snow and ice | 32 81 | 88 81 | ..... | 1 66 |
| 13 | Tunnels and subways | ..... | ..... | ..... | ..... |
| 14 | Elevated structures and foundations | ..... | ..... | ..... | ..... |
| 15 | Bridges, trestles and culverts | 173 72 | ..... | ..... | ..... |
| 16 | Crossings, fences and signs | 11 57 | 2 58 | ..... | ..... |
| 17 | Signal and interlocking apparatus | ..... | ..... | ..... | ..... |
| 18 | Telephone and telegraph lines | 15 25 | 9 00 | 25 00 | 25 75 |
| 19 | Miscellaneous way expenses | ..... | ..... | ..... | ..... |
| 20 | Poles and fixtures | 15 25 | 15 00 | 25 00 | 72 75 |
| 21 | Underground conduits | ..... | ..... | ..... | ..... |
| 22 | Distribution system | 72 25 | 18 00 | 29 00 | 74 13 |
| 23 | Miscellaneous electric line expenses | ..... | ..... | ..... | ..... |
| 24 | Buildings, fixtures and grounds | 116 04 | 64 16 | 88 07 | 11 96 |
| 25 | Depreciation of way and structures | ..... | ..... | ..... | ..... |
| 26 | Other operations—Dr. | ..... | ..... | ..... | ..... |
| 27 | Other operations—Cr. | ..... | ..... | ..... | ..... |
| 28 | Equalization—way and structures | ..... | ..... | ..... | ..... |
| | Total | 996 06 | 720 79 | 821 15 | 945 86 |
| No. | Maintenance of Equipment. | | | | |
| 29 | Superintendence of equipment | 16 00 | 22 55 | 16 00 | 22 55 |
| 30 | Passenger and combination cars | 373 20 | 161 42 | 466 38 | 267 95 |
| 31 | Freight, express and mail cars | ..... | ..... | ..... | ..... |
| 32 | Service equipment | ..... | ..... | ..... | ..... |
| 33 | Electric equipment of cars | 150 18 | 148 24 | 129 01 | 124 81 |
| 34 | Locomotives | ..... | ..... | ..... | ..... |
| 35 | Floating equipment | ..... | ..... | ..... | ..... |
| 36 | Shop equipment | ..... | ..... | ..... | ..... |
| 37 | Shop expenses | 1 36 | 5 98 | 1 74 | 16 84 |
| 38 | Vehicles and horses | ..... | ..... | ..... | ..... |
| 39 | Miscellaneous equipment expenses | ..... | ..... | ..... | ..... |
| 40 | Depreciation of equipment | ..... | ..... | ..... | ..... |
| 41 | Equipment retired | ..... | ..... | ..... | ..... |
| 42 | Other operations—Dr. | ..... | ..... | ..... | ..... |
| 43 | Other operations—Cr. | ..... | ..... | ..... | ..... |
| 44 | Equalization—equipment | ..... | ..... | ..... | ..... |
| | Total | 540 74 | 338 19 | 613 13 | 432 15 |

## RAILWAY.

by Months, November, 1914, to October, 1916—Continued.

| 1915 June | 1916 June | 1915 July | 1916 July | 1915 August | 1916 August | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 16 00 | 36 44 | 16 00 | 33 69 | 16 00 | 40 94 | 1 |
| 14 00 | 14 00 | 14 00 | 14 00 | 14 00 | 14 00 | 2 |
| 39 67 | 39 67 | 238 71 | 39 67 | 115 51 | 63 67 | 3 |
| 51 33 | 51 33 | 51 33 | 51 33 | 119 83 | 51 33 | 4 |
| 4 67 | 4 67 | 4 67 | 4 67 | 4 67 | 4 67 | 5 |
| 4 67 | 4 67 | 4 67 | 4 67 | 34 69 | 4 67 | 6 |
| ..... | ..... | ..... | ..... | ..... | ..... | 7 |
| 588 76 | 487 67 | 477 94 | 654 61 | 493 87 | 478 29 | 8 |
| 6 40 | 11 58 | 5 65 | 33 96 | 6 92 | 7 26 | 9 |
| ..... | ..... | 5 65 | ..... | 5 01 | ..... | 10 |
| 26 72 | 27 20 | 34 71 | 42 92 | 25 46 | 30 17 | 11 |
| ..... | ..... | ..... | ..... | ..... | ..... | 12 |
| ..... | ..... | ..... | ..... | ..... | ..... | 13 |
| ..... | ..... | ..... | ..... | ..... | ..... | 14 |
| ..... | ..... | ..... | ..... | ..... | 36 00 | 15 |
| 2 96 | ..... | ..... | ..... | ..... | 3 50 | 16 |
| ..... | ..... | ..... | ..... | ..... | ..... | 17 |
| 25 00 | 27 83 | 25 00 | 33 25 | 31 08 | 14 68 | 18 |
| ..... | ..... | ..... | ..... | ..... | ..... | 19 |
| 34 00 | 36 50 | 35 29 | 27 50 | 25 00 | 13 00 | 20 |
| ..... | ..... | ..... | ..... | ..... | ..... | 21 |
| 35 80 | 195 99 | 34 00 | 110 58 | 47 05 | 26 99 | 22 |
| ..... | ..... | ..... | ..... | ..... | ..... | 23 |
| 57 32 | ..... | 59 11 | 62 61 | 56 93 | 67 64 | 24 |
| ..... | ..... | ..... | ..... | ..... | ..... | 25 |
| ..... | ..... | ..... | ..... | ..... | ..... | 26 |
| ..... | ..... | ..... | ..... | ..... | ..... | 27 |
| ..... | ..... | ..... | ..... | ..... | ..... | 28 |
| 907 30 | 937 55 | 1,006 73 | 1,113 46 | 996 02 | 856 81 | |
| | | | | | | |
| 16 00 | 22 55 | 20 50 | 22 55 | 16 00 | 22 55 | 29 |
| 136 69 | 242 47 | 143 51 | 185 35 | 118 40 | 205 23 | 30 |
| ..... | ..... | ..... | ..... | ..... | ..... | 31 |
| ..... | ..... | ..... | ..... | ..... | ..... | 32 |
| 108 38 | 188 60 | 136 29 | 109 97 | 115 18 | 128 23 | 33 |
| ..... | ..... | ..... | ..... | ..... | ..... | 34 |
| ..... | ..... | ..... | ..... | ..... | ..... | 35 |
| ..... | ..... | ..... | ..... | ..... | ..... | 36 |
| 57 | 7 10 | 2 04 | 15 88 | 7 23 | 21 54 | 37 |
| ..... | ..... | ..... | ..... | ..... | ..... | 38 |
| ..... | ..... | ..... | ..... | ..... | ..... | 39 |
| ..... | ..... | ..... | ..... | ..... | ..... | 40 |
| ..... | ..... | ..... | ..... | ..... | ..... | 41 |
| ..... | ..... | ..... | ..... | ..... | ..... | 42 |
| ..... | ..... | ..... | ..... | ..... | ..... | 43 |
| ..... | ..... | ..... | ..... | ..... | ..... | 44 |
| 261 64 | 460 72 | 302 34 | 333 75 | 256 81 | 377 55 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures by

| No. | Maintenance of Way and Structures. | 1915 September | 1916 September | 1915 October |
|---|---|---|---|---|
| | | $ c. | $ c. | $ c. |
| 1 | Superintendence of way and structures | 16 00 | 36 44 | 16 00 |
| 2 | Ballast | 14 00 | 14 00 | 14 00 |
| 3 | Ties | 39 67 | 113 59 | 39 67 |
| 4 | Rails | 51 33 | 51 33 | 48 93 |
| 5 | Rail fastenings and joints | 4 67 | 4 67 | 4 67 |
| 6 | Special work | 4 67 | 4 67 | 4 67 |
| 7 | Underground construction | | | |
| 8 | Track and roadway labor | 483 81 | 595 73 | 477 18 |
| 9 | Miscellaneous track and roadway expenses | 2 73 | 2 81 | 5 40 |
| 10 | Paving | 4 78 | | 4 40 |
| 11 | Cleaning and sanding track | 37 66 | 18 32 | 33 54 |
| 12 | Removal of snow and ice | | | |
| 13 | Tunnels and subways | | | |
| 14 | Elevated structures and foundations | | | |
| 15 | Bridges, trestles and culverts | | | |
| 16 | Crossings, fences and signs | | | |
| 17 | Signal and interlocking apparatus | | | |
| 18 | Telephone and telegraph lines | 25 00 | 13 00 | 25 00 |
| 19 | Miscellaneous way expenses | | | 2 00 |
| 20 | Poles and fixtures | 46 00 | 13 00 | 60 75 |
| 21 | Underground conduits | | | |
| 22 | Distribution system | 46 00 | 39 00 | 113 25 |
| 23 | Miscellaneous electric line expenses | | | |
| 24 | Buildings, fixtures and grounds | 79 51 | 78 | 56 46 |
| 25 | Depreciation of way and structures | | | |
| 26 | Other operations—Dr. | | | |
| 27 | Other operations—Cr. | | | |
| 28 | Equalization—way and structures | | | |
| | Total | 855 83 | 907 34 | 905 92 |
| | Maintenance of Equipment. | | | |
| 29 | Superintendence of equipment | 16 00 | 22 55 | 16 00 |
| 30 | Passenger and combination cars | 144 46 | 76 67 | 108 76 |
| 31 | Freight, express and mail cars | | 69 14 | |
| 32 | Service equipment | | | |
| 33 | Electric equipment of cars | 47 96 | 233 16 | 15 43 |
| 34 | Locomotives | | | |
| 35 | Floating equipment | | | |
| 36 | Shop equipment | | | |
| 37 | Shop expenses | 235 34 | 5 36 | 5 02 |
| 38 | Vehicles and horses | | | |
| 39 | Miscellaneous equipment expenses | | | |
| 40 | Depreciation of equipment | | | |
| 41 | Equipment retired | | | |
| 42 | Other operations—Dr. | | | |
| 43 | Other operations—Cr. | | | |
| 44 | Equalization—equipment | | | |
| | Total | 443 76 | 406 88 | 145 21 |

## RAILWAY.

Months, November, 1914, to October, 1916—Continued.

| 1916 October | 1915 Total | 1916 Total | Increase | Decrease | No. |
|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | |
| 36 44 | 240 00 | 378 75 | 138 75 | ..... | 1 |
| 14 00 | 183 22 | 288 19 | 104 97 | ..... | 2 |
| 252 47 | 750 92 | 978 76 | 227 84 | ..... | 3 |
| 51 33 | 682 06 | 615 96 | ..... | 66 10 | 4 |
| 4 67 | 79 88 | 60 74 | ..... | 19 14 | 5 |
| 4 67 | 221 09 | 146 79 | ..... | 74 30 | 6 |
| ..... | ..... | ..... | ..... | ..... | 7 |
| 482 02 | 5,214 29 | 4,574 16 | ..... | 640 13 | 8 |
| 5 89 | 62 75 | 88 82 | 26 07 | ..... | 9 |
| 31 85 | 42 63 | 57 42 | 14 79 | ..... | 10 |
| 13 48 | 238 71 | 166 59 | ..... | 72 12 | 11 |
| 24 76 | 1,253 37 | 2,222 84 | 969 47 | ..... | 12 |
| ..... | ..... | ..... | ..... | ..... | 13 |
| ..... | ..... | ..... | ..... | ..... | 14 |
| ..... | 311 16 | 36 00 | ..... | 275 16 | 15 |
| 7 39 | 47 36 | 41 30 | ..... | 6 06 | 16 |
| ..... | ..... | ..... | ..... | ..... | 17 |
| 30 58 | 296 82 | 261 34 | ..... | 35 48 | 18 |
| ..... | 2 00 | ..... | ..... | 2 00 | 19 |
| 22 00 | 638 82 | 371 85 | ..... | 266 97 | 20 |
| ..... | ..... | ..... | ..... | ..... | 21 |
| 59 90 | 1,024 31 | 743 43 | ..... | 280 88 | 22 |
| ..... | ..... | ..... | ..... | ..... | 23 |
| 5 28 | 1,087 82 | 215 80 | ..... | 872 02 | 24 |
| ..... | ..... | ..... | ..... | ..... | 25 |
| ..... | ..... | ..... | ..... | ..... | 26 |
| ..... | ..... | ..... | ..... | ..... | 27 |
| ..... | ..... | ..... | ..... | ..... | 28 |
| 1,046 73 | 12,377 21 | 11,248 74 | ..... | 1,128 47 | |
| | | | | | |
| 22 55 | 275 10 | 256 50 | ..... | 18 60 | 29 |
| 336 43 | 3,437 81 | 2,951 24 | ..... | 486 57 | 30 |
| 28 36 | ..... | 97 50 | 97 50 | ..... | 31 |
| ..... | ..... | ..... | ..... | ..... | 32 |
| 104 55 | 1,461 73 | 1,568 08 | 106 35 | ..... | 33 |
| ..... | ..... | ..... | ..... | ..... | 34 |
| ..... | ..... | ..... | ..... | ..... | 35 |
| ..... | ..... | ..... | ..... | ..... | 36 |
| 5 02 | 334 50 | 124 79 | ..... | 209 71 | 37 |
| ..... | ..... | ..... | ..... | ..... | 38 |
| ..... | ..... | ..... | ..... | ..... | 39 |
| ..... | ..... | ..... | ..... | ..... | 40 |
| ..... | ..... | ..... | ..... | ..... | 41 |
| ..... | ..... | ..... | ..... | ..... | 42 |
| ..... | ..... | ..... | ..... | ..... | 43 |
| ..... | ..... | ..... | ..... | ..... | 44 |
| 496 91 | 5,509 14 | 4,998 11 | ..... | 511 03 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures by

| No. | Power. | 1914 November | 1915 November | 1914 December | 1915 December |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 45 | Superintendence of power | 32 00 | 16 00 | 41 38 | 16 00 |
| 46 | Power plant buildings, fixtures, grounds | ..... | ..... | ..... | ..... |
| 47 | Power plant equipment | ..... | ..... | ..... | ..... |
| 48 | Substation equipment | ..... | ..... | ..... | ..... |
| 49 | Transmission system | 33 00 | 25 00 | 40 85 | 25 00 |
| 50 | Depreciation of power plant buildings and equipment | ..... | ..... | ..... | ..... |
| 51 | Equalization—power | ..... | ..... | ..... | ..... |
| 52 | Power plant employees | ..... | ..... | ..... | ..... |
| 53 | Fuel for power | ..... | ..... | ..... | ..... |
| 54 | Water for power | ..... | ..... | ..... | ..... |
| 55 | Lubricants for power | ..... | ..... | ..... | ..... |
| 56 | Miscellaneous power plant supplies and expenses | ..... | ..... | ..... | ..... |
| 57 | Substation employees | 157 50 | 160 00 | 160 00 | 160 00 |
| 58 | Substation supplies and expenses | ..... | 3 41 | ..... | 7 32 |
| 59 | Power purchased | 1,377 00 | 1,257 75 | 1,613 25 | 1,334 25 |
| 60 | Power exchanged—balance | ..... | ..... | ..... | ..... |
| 61 | Power transferred—credit | ..... | ..... | ..... | ..... |
| 62 | Other operations—credit | ..... | ..... | ..... | ..... |
| | Total | 1,599 50 | 1,462 16 | 1,855 48 | 1,542 57 |
| | Conducting Transportation. | | | | |
| 63 | Superintendence of transportation | 32 00 | 112 00 | 32 00 | 112 00 |
| 64 | Passenger conductors, motormen and trainmen | 1,586 30 | 1,435 76 | 1,593 37 | 1,482 48 |
| 65 | Freight and express conductors, motormen and trainmen | 273 00 | 320 06 | 279 40 | 288 40 |
| 66 | Miscellaneous car service employees | 6 08 | 6 46 | 10 26 | ..... |
| 67 | Miscellaneous car service expenses | 85 71 | 300 83 | 368 33 | 462 16 |
| 68 | Station employees | 25 50 | ..... | 95 50 | ..... |
| 69 | Station expenses | 63 46 | 7 32 | 21 93 | 90 |
| 70 | Carhouse employees | 210 00 | 210 00 | 217 50 | 150 00 |
| 71 | Carhouse expenses | ..... | ..... | ..... | ..... |
| 72 | Operation of signal and interlocking apparatus | ..... | ..... | ..... | ..... |
| 73 | Operation of telephone and telegraph lines | 54 | ..... | ..... | 1 40 |
| 74 | Operation of floating equipment | ..... | ..... | ..... | ..... |
| 75 | Operation of steam locomotives | ..... | ..... | ..... | ..... |
| 76 | Freight and express collection and delivery | ..... | ..... | ..... | ..... |
| 77 | Loss and damage | ..... | ..... | ..... | ..... |
| 78 | Other transportation expenses | ..... | ..... | ..... | 1 36 |
| | Total | 2,282 59 | 2,392 43 | 2,618 29 | 2,498 70 |
| | Traffic. | | | | |
| 79 | Superintendence and solicitation | 32 00 | ..... | 32 00 | ..... |
| 80 | Advertising | 16 80 | 28 00 | 33 60 | 33 60 |
| 81 | Parks, resorts and attractions | ..... | ..... | ..... | ..... |
| 82 | Miscellaneous traffic expenses | ..... | ..... | ..... | ..... |
| | Total | 48 80 | 28 00 | 65 60 | 33 60 |

## RAILWAY.

Months, November, 1914, to October, 1916—Continued.

| 1915 January | 1916 January | 1915 February | 1916 February | 1915 March | 1916 March | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 32 00 | 17 00 | 23 30 | 22 60 | 16 00 | 22 55 | 45 |
| ..... | ..... | ..... | ..... | ..... | ..... | 46 |
| ..... | ..... | ..... | ..... | ..... | ..... | 47 |
| 119 10 | 79 70 | 173 75 | 18 75 | ..... | ..... | 48 |
| 31 00 | 25 00 | 89 60 | 41 25 | 51 47 | ..... | 49 |
| ..... | ..... | ..... | ..... | ..... | ..... | 50 |
| ..... | ..... | ..... | ..... | ..... | ..... | 51 |
| ..... | ..... | ..... | ..... | ..... | ..... | 52 |
| ..... | ..... | ..... | ..... | ..... | ..... | 53 |
| ..... | ..... | ..... | ..... | ..... | ..... | 54 |
| ..... | ..... | ..... | ..... | ..... | ..... | 55 |
| ..... | ..... | ..... | ..... | ..... | ..... | 56 |
| 160 00 | 168 40 | 165 50 | 160 00 | 160 00 | 160 00 | 57 |
| ..... | 2 46 | ..... | 1 29 | ..... | 3 13 | 58 |
| 1,633 50 | 1,548 00 | 1,449 00 | 1,584 00 | 1,455 75 | 1,516 50 | 59 |
| ..... | ..... | ..... | ..... | ..... | ..... | 60 |
| ..... | ..... | ..... | ..... | ..... | ..... | 61 |
| ..... | ..... | ..... | ..... | ..... | ..... | 62 |
| 1,975 60 | 1,840 56 | 1,901 15 | 1,827 89 | 1,683 22 | 1,702 18 | |
| | | | | | | |
| 32 00 | 119 00 | 112 00 | 132 96 | 112 00 | 132 88 | 63 |
| 1,646 16 | 1,525 18 | 1,507 72 | 1,501 64 | 1,660 10 | 1,590 59 | 64 |
| 276 40 | 293 84 | 251 20 | 269 68 | 279 40 | 368 10 | 65 |
| 6 84 | 6 84 | 6 08 | 5 70 | 6 84 | 6 84 | 66 |
| 31 27 | 29 33 | 79 58 | Cr. 154 87 | 40 53 | 277 91 | 67 |
| 58 00 | ..... | 37 50 | ..... | 3 00 | ..... | 68 |
| 1 15 | 9 82 | 17 29 | 5 45 | 17 78 | 6 57 | 69 |
| 208 91 | 166 08 | 210 00 | 200 00 | 185 00 | 200 00 | 70 |
| 17 70 | ..... | 233 35 | ..... | 4 11 | ..... | 71 |
| ..... | ..... | ..... | ..... | ..... | ..... | 72 |
| ..... | ..... | ..... | ..... | ..... | ..... | 73 |
| ..... | ..... | ..... | ..... | ..... | ..... | 74 |
| ..... | ..... | ..... | ..... | ..... | ..... | 75 |
| ..... | ..... | ..... | ..... | ..... | ..... | 76 |
| ..... | ..... | 4 42 | ..... | ..... | ..... | 77 |
| ..... | ..... | ..... | ..... | ..... | ..... | 78 |
| 2,278 43 | 2,150 09 | 2,459 14 | 1,960 56 | 2,308 76 | 2,582 89 | |
| | | | | | | |
| 32 00 | ..... | ..... | 13 96 | ..... | 13 88 | 79 |
| 11 20 | 44 80 | 11 20 | ..... | ..... | 78 40 | 80 |
| ..... | ..... | ..... | ..... | ..... | ..... | 81 |
| ..... | ..... | ..... | ..... | ..... | ..... | 82 |
| 43 20 | 44 80 | 11 20 | 13 96 | ..... | 92 28 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures by

| No. | Power. | 1915 April | 1916 April | 1915 May | 1916 May |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 45 | Superintendence of power | 16 00 | 22 55 | 16 00 | 22 55 |
| 46 | Power plant buildings, fixtures and grounds | 1 51 | ..... | 1 91 | ..... |
| 47 | Power plant equipment | ..... | ..... | ..... | ..... |
| 48 | Substation equipment | 21 00 | ..... | 2 00 | 30 00 |
| 49 | Transmission system | 33 25 | ..... | 25 00 | 34 00 |
| 50 | Depreciation of power plant buildings and equipment | ..... | ..... | ..... | ..... |
| 51 | Equalization—power | ..... | ..... | ..... | ..... |
| 52 | Power plant employees | ..... | ..... | ..... | ..... |
| 53 | Fuel for power | ..... | ..... | ..... | ..... |
| 54 | Water for power | ..... | ..... | ..... | ..... |
| 55 | Lubricants for power | ..... | ..... | ..... | ..... |
| 56 | Miscellaneous power plant supplies and expenses | ..... | ..... | ..... | ..... |
| 57 | Substation employees | 160 00 | 160 00 | 160 00 | 160 00 |
| 58 | Substation supplies and expenses | ..... | 95 | ..... | 25 |
| 59 | Power purchased | 1,201 50 | 1,253 25 | 1,203 75 | 1,275 75 |
| 60 | Power exchanged—balance | ..... | ..... | ..... | ..... |
| 61 | Power transferred—credit | ..... | ..... | ..... | ..... |
| 62 | Other operations—credit | ..... | ..... | ..... | ..... |
| | Total | 1,433 26 | 1,436 75 | 1,408 66 | 1,522 55 |
| | Conducting Transportation. | | | | |
| 63 | Superintendence of transportation | 241 95 | 132 88 | 112 00 | 132 88 |
| 64 | Passenger conductors, motormen and trainmen | 1,560 54 | 1,551 92 | 1,540 58 | 1,679 07 |
| 65 | Freight and express conductors, motormen and trainmen | 270 00 | 268 10 | 273 50 | 265 90 |
| 66 | Miscellaneous car service employees | 6 46 | 6 46 | 6 84 | 6 56 |
| 67 | Miscellaneous car service expenses | 331 61 | 369 24 | 27 46 | 65 90 |
| 68 | Station employees | ..... | ..... | ..... | ..... |
| 69 | Station expenses | 2 16 | 4 68 | 1 77 | Cr. 55 |
| 70 | Carhouse employees | 210 00 | 189 67 | 210 00 | 173 55 |
| 71 | Carhouse expenses | ..... | 204 09 | ..... | ..... |
| 72 | Operation of signal and interlocking apparatus | ..... | ..... | ..... | ..... |
| 73 | Operation of telephone and telegraph lines | ..... | ..... | ..... | ..... |
| 74 | Operation of floating equipment | ..... | ..... | ..... | ..... |
| 75 | Operation of steam locomotives | ..... | ..... | ..... | ..... |
| 76 | Freight and express collection and delivery | ..... | ..... | ..... | ..... |
| 77 | Loss and damage | ..... | ..... | ..... | ..... |
| 78 | Other transportation expenses | ..... | ..... | ..... | ..... |
| | Total | 2,622 72 | 2,727 04 | 2,172 15 | 2,323 31 |
| | Traffic. | | | | |
| 79 | Superintendence and solicitation | ..... | 13 88 | ..... | 13 88 |
| 80 | Advertising | 57 40 | 39 20 | 75 79 | 43 75 |
| 81 | Parks, resorts and attractions | ..... | ..... | ..... | ..... |
| 82 | Miscellaneous traffic expenses | ..... | ..... | ..... | ..... |
| | Total | 57 40 | 53 08 | 75 79 | 57 63 |

## RAILWAY.

Months, November, 1914, to October, 1916—Continued.

| 1915 June | 1916 June | 1915 July | 1916 July | 1915 August | 1916 August | No. |
|---|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | |
| 16 00 | 22 55 | 16 00 | 22 55 | 16 00 | 22 55 | 45 |
| | | | | | | 46 |
| | | | | | | 47 |
| 36 15 | 22 50 | | 47 | 25 15 | | 48 |
| 25 00 | | 25 00 | 14 90 | 25 00 | 13 00 | 49 |
| | | | | | | 50 |
| | | | | | | 51 |
| | | | | | | 52 |
| | | | | | | 53 |
| | | | | | | 54 |
| | | | | | | 55 |
| | | | | | | 56 |
| 160 00 | 160 00 | 160 00 | 160 00 | 160 00 | 160 00 | 57 |
| | | | 1 08 | | 40 | 58 |
| 1,183 50 | 1,230 75 | 1,246 50 | 1,271 25 | 1,273 50 | 1,311 75 | 59 |
| | | | | | | 60 |
| | | | | | | 61 |
| | | | | | | 62 |
| 1,420 65 | 1,435 80 | 1,447 50 | 1,470 25 | 1,499 65 | 1,507 70 | |
| 112 00 | 132 88 | 112 00 | 132 88 | 112 00 | 132 88 | 63 |
| 1,525 01 | 1,646 44 | 1,596 65 | 1,649 71 | 1,426 82 | 1,621 93 | 64 |
| 272 40 | 263 00 | 279 40 | 263 40 | 278 00 | 267 50 | 65 |
| 6 99 | | 6 99 | 7 20 | 6 46 | 6 30 | 66 |
| 18 93 | 3 33 | 147 05 | 106 17 | 9 00 | 29 44 | 67 |
| | | | | | | 68 |
| | 18 17 | 8 44 | 90 | 66 45 | 120 92 | 69 |
| 210 00 | 259 35 | 210 00 | 211 65 | 210 00 | 210 00 | 70 |
| | | | | | | 71 |
| | | | | | | 72 |
| | | | | | | 73 |
| | | | | | | 74 |
| | | | | | | 75 |
| | | | | | | 76 |
| Cr. 1 65 | | | | | | 77 |
| | | | | | 32 76 | 78 |
| 2,143 68 | 2,323 17 | 2,360 53 | 2,371 91 | 2,108 73 | 2,421 73 | |
| | 18 13 | | 13 88 | | 13 88 | 79 |
| 33 60 | 33 60 | 28 00 | 33 60 | 49 20 | | 80 |
| | | | | | | 81 |
| | | | | | | 82 |
| 33 60 | 51 73 | 28 00 | 47 48 | 49 20 | 13 88 | |

## NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures by

| No. | Power. | 1915 September | 1916 September | 1915 October |
|---|---|---|---|---|
| | | $ c. | $ c. | $ c. |
| 45 | Superintendence of power | 16 00 | 22 55 | 16 00 |
| 46 | Power plant buildings, fixtures and grounds | ..... | ..... | ..... |
| 47 | Power plant equipment | ..... | 60 60 | ..... |
| 48 | Substation equipment | 75 | 157 27 | 953 68 |
| 49 | Transmission system | 25 00 | 13 00 | 25 00 |
| 50 | Depreciation of power plant buildings and equipment | ..... | ..... | ..... |
| 51 | Equalization—power | ..... | ..... | ..... |
| 52 | Power plant employees | ..... | ..... | ..... |
| 53 | Fuel for power | ..... | ..... | ..... |
| 54 | Water for power | ..... | ..... | ..... |
| 55 | Lubricants for power | ..... | ..... | ..... |
| 56 | Miscellaneous power plant supplies and expenses | ..... | ..... | ..... |
| 57 | Substation employees | 160 00 | 160 00 | 160 00 |
| 58 | Substation supplies and expenses | ..... | 1 46 | ..... |
| 59 | Power purchased | 1,273 50 | 1,269 00 | 1,329 75 |
| 60 | Power exchanged—balance | ..... | ..... | ..... |
| 61 | Power transferred—credit | ..... | ..... | ..... |
| 62 | Other operations—credit | ..... | ..... | ..... |
| | Total | 1,475 25 | 1,683 88 | 2,484 43 |
| | **Conducting Transportation.** | | | |
| 63 | Superintendence of transportation | 112 00 | 132 88 | 112 00 |
| 64 | Passenger conductors, motormen and trainmen | 1,430 76 | 1,596 71 | 1,469 13 |
| 65 | Freight and express conductors, motormen and trainmen | 261 60 | 257 00 | 270 40 |
| 66 | Miscellaneous car service employees | 6 46 | 7 14 | 6 84 |
| 67 | Miscellaneous car service expenses | 23 85 | 82 72 | 14 10 |
| 68 | Station employees | ..... | ..... | ..... |
| 69 | Station expenses | 2 56 | 2 03 | 13 63 |
| 70 | Carhouse employees | 210 00 | 210 00 | 210 00 |
| 71 | Carhouse expenses | 18 21 | ..... | ..... |
| 72 | Operation of signal and interlocking apparatus | ..... | ..... | ..... |
| 73 | Operation of telephone and telegraph lines | ..... | ..... | ..... |
| 74 | Operation of floating equipment | ..... | ..... | ..... |
| 75 | Operation of steam locomotives | ..... | ..... | ..... |
| 76 | Freight and express collection and delivery | ..... | ..... | ..... |
| 77 | Loss and damage | ..... | ..... | ..... |
| 78 | Other transportation expenses | ..... | Cr. 38 03 | ..... |
| | Total | 2,065 44 | 2,250 45 | 2,096 10 |
| | **Traffic.** | | | |
| 79 | Superintendence and solicitation | ..... | 13 88 | ..... |
| 80 | Advertising | 28 00 | 28 00 | 33 60 |
| 81 | Parks, resorts and attractions | ..... | ..... | ..... |
| 82 | Miscellaneous traffic expenses | ..... | ..... | ..... |
| | Total | 28 00 | 41 88 | 33 60 |

## RAILWAY.

Months, November, 1914, to October, 1916—Continued.

| 1916 October | 1915 Total | 1916 Total | Increase | Decrease | No. |
|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | |
| 22 55 | 256 68 | 252 00 | ..... | 4 68 | 45 |
| ..... | 3 42 | ..... | ..... | 3 42 | 46 |
| ..... | ..... | 60 60 | 60 60 | ..... | 47 |
| Cr. 379 00 | 1,331 58 | Cr. 70 31 | ..... | 1,401 89 | 48 |
| 5 40 | 429 17 | 196 55 | ..... | 232 62 | 49 |
| ..... | ..... | ..... | ..... | ..... | 50 |
| ..... | ..... | ..... | ..... | ..... | 51 |
| ..... | ..... | ..... | ..... | ..... | 52 |
| ..... | ..... | ..... | ..... | ..... | 53 |
| ..... | ..... | ..... | ..... | ..... | 54 |
| ..... | ..... | ..... | ..... | ..... | 55 |
| ..... | ..... | ..... | ..... | ..... | 56 |
| 217 60 | 1,923 00 | 1,986 00 | 63 00 | ..... | 57 |
| 1 73 | ..... | 23 48 | 23 48 | ..... | 58 |
| 1,255 50 | 16,240 50 | 16,107 75 | ..... | 132 75 | 59 |
| ..... | ..... | ..... | ..... | ..... | 60 |
| ..... | ..... | ..... | ..... | ..... | 61 |
| ..... | ..... | ..... | ..... | ..... | 62 |
| 1,123 78 | 20,184 35 | 18,556 07 | ..... | 1,628 28 | |
| 132 88 | 1,233 95 | 1,539 00 | 305 05 | ..... | 63 |
| 1,573 52 | 18,543 14 | 18,854 95 | 311 81 | ..... | 64 |
| 263 40 | 3,264 70 | 3,388 38 | 123 68 | ..... | 65 |
| 6 72 | 83 14 | 66 22 | ..... | 16 92 | 66 |
| 539 49 | 1,177 42 | 2,111 65 | 934 23 | ..... | 67 |
| 36 25 | 219 50 | 36 25 | ..... | 183 25 | 68 |
| 9 40 | 216 62 | 185 61 | ..... | 31 01 | 69 |
| 210 00 | 2,501 41 | 2,390 30 | ..... | 111 11 | 70 |
| ..... | 273 37 | 204 09 | ..... | 69 28 | 71 |
| ..... | ..... | ..... | ..... | ..... | 72 |
| ..... | 54 | 1 40 | 86 | ..... | 73 |
| ..... | ..... | ..... | ..... | ..... | 74 |
| ..... | ..... | ..... | ..... | ..... | 75 |
| ..... | ..... | ..... | ..... | ..... | 76 |
| ..... | 2 77 | ..... | ..... | 2 77 | 77 |
| 47 61 | ..... | 43 70 | 43 70 | ..... | 78 |
| 2,819 27 | 27,516 56 | 28,821 55 | 1,304 99 | ..... | |
| 13 88 | 96 00 | 129 25 | 33 25 | ..... | 79 |
| 39 20 | 378 39 | 402 15 | 23 76 | ..... | 80 |
| ..... | ..... | ..... | ..... | ..... | 81 |
| ..... | ..... | ..... | ..... | ..... | 82 |
| 53 08 | 474 39 | 531 40 | 57 01 | ..... | |

Comparative Statement of Earnings and Expenditures by

| No. | General and Miscellaneous. | 1914 November. | 1915 November. | 1914 December. |
|---|---|---|---|---|
| | | $ c. | $ c. | $ c. |
| 83 | Salaries and expenses of general officers | | | |
| 84 | Salaries and expenses of general office clerks | 155 00 | 155 00 | 155 00 |
| 85 | General office supplies and expenses | 84 49 | 10 00 | 41 27 |
| 86 | Law expenses | | | |
| 87 | Relief department expenses | | | |
| 88 | Pensions and gratuities | | | |
| 89 | Miscellaneous general expenses | 7 35 | 3 90 | 90 |
| 90 | Valuation expenses | | | |
| 91 | Amortization of franchises | | | |
| 92 | Injuries and damages | | | |
| 93 | Insurance | 132 96 | 48 20 | 119 63 |
| 94 | Stationery and printing | | 233 11 | 37 50 |
| 95 | Store expenses | | | |
| 96 | Garage and stable expenses | | | |
| 97 | Rent of tracks and facilities | 862 92 | 102 00 | Cr. 812 92 |
| 98 | Rent of equipment | 75 90 | | 273 90 |
| 99 | Other operations—Dr. | | | |
| 100 | Other operations—Cr. | | | |
| | Total | 1,318 62 | 552 21 | Cr. 184 72 |

Comparative Statement of Earnings and Expenditures by

| No. | General and Miscellaneous. | 1915 March. | 1916 March. | 1915 April. |
|---|---|---|---|---|
| | | $ c. | $ c. | $ c. |
| 83 | Salaries and expenses of general officers | | 248 33 | |
| 84 | Salaries and expenses of general office clerks | 155 00 | 186 66 | 155 00 |
| 85 | General office supplies and expenses | 5 84 | 5 00 | 7 33 |
| 86 | Law expenses | | | |
| 87 | Relief department expenses | | | |
| 88 | Pensions and gratuities | | | |
| 89 | Miscellaneous general expenses | 12 50 | 3 50 | 1 75 |
| 90 | Valuation expenses | | | |
| 91 | Amortization of franchises | | | |
| 92 | Injuries and damages | | 104 00 | |
| 93 | Insurance | 114 12 | 35 39 | 113 77 |
| 94 | Stationery and printing | 84 69 | 28 01 | 5 00 |
| 95 | Store expenses | | | |
| 96 | Garage and stable expenses | | | |
| 97 | Rent of tracks and facilities | 50 00 | 50 00 | 249 68 |
| 98 | Rent of equipment | 293 25 | 294 30 | 282 45 |
| 99 | Other operations—Dr. | | | |
| 100 | Other operations—Cr. | | | |
| | Total | 715 40 | 955 19 | 814 98 |

Months, November, 1914, to October, 1916.—Continued.

| 1915 December. | 1915 January. | 1916 January. | 1915 February. | 1916 February. | No. |
|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | |
| ..... | ..... | ..... | ..... | 248 36 | 83 |
| 155 00 | 155 00 | 160 00 | 155 00 | 186 72 | 84 |
| 5 00 | 3 75 | 11 40 | 4 45 | 5 00 | 85 |
| ..... | ..... | ..... | ..... | ..... | 86 |
| ..... | ..... | ..... | ..... | ..... | 87 |
| ..... | ..... | ..... | ..... | ..... | 88 |
| 3 00 | 5 50 | 3 35 | 2 25 | 2 40 | 89 |
| ..... | ..... | ..... | ..... | ..... | 90 |
| ..... | ..... | ..... | ..... | ..... | 91 |
| ..... | ..... | ..... | ..... | 25 00 | 92 |
| 32 77 | 112 91 | 35 41 | 112 91 | 35 39 | 93 |
| 32 60 | 58 60 | 13 73 | 6 21 | 3 50 | 94 |
| ..... | ..... | ..... | ..... | ..... | 95 |
| ..... | ..... | ..... | ..... | ..... | 96 |
| 50 00 | 25 00 | 159 66 | 25 00 | 50 00 | 97 |
| 347 85 | 75 00 | 199 35 | 302 70 | ..... | 98 |
| ..... | ..... | ..... | ..... | ..... | 99 |
| ..... | ..... | ..... | ..... | ..... | 100 |
| 626 22 | 435 76 | 582 90 | 608 52 | 556 37 | |

Months, November, 1914, to October, 1916.—Continued.

| 1916 April. | 1915 May. | 1916 May. | 1915 June. | 1916 June. | No. |
|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | |
| 248 33 | ..... | 248 33 | ..... | 248 33 | 83 |
| 186 66 | 155 00 | 186 66 | 155 00 | 186 66 | 84 |
| 5 00 | 4 50 | 5 00 | 4 25 | 5 00 | 85 |
| ..... | ..... | 3 00 | ..... | ..... | 86 |
| ..... | ..... | ..... | ..... | ..... | 87 |
| ..... | ..... | ..... | ..... | ..... | 88 |
| 1 20 | 40 | ..... | ..... | 2 90 | 89 |
| ..... | ..... | ..... | ..... | ..... | 90 |
| ..... | ..... | ..... | ..... | ..... | 91 |
| 39 66 | ..... | 32 11 | 100 00 | 400 00 | 92 |
| 35 39 | 113 77 | 35 39 | 94 09 | 44 14 | 93 |
| ..... | 6 00 | 12 50 | 10 20 | 15 91 | 94 |
| ..... | ..... | ..... | ..... | ..... | 95 |
| ..... | ..... | ..... | ..... | ..... | 96 |
| 150 74 | 50 00 | 97 45 | 50 00 | 50 00 | 97 |
| 335 70 | 832 80 | 278 55 | 300 45 | 202 95 | 98 |
| ..... | ..... | ..... | ..... | ..... | 99 |
| ..... | ..... | ..... | ..... | ..... | 100 |
| 1,002 68 | 1,162 47 | 898 99 | 713 99 | 1,155 89 | ..... |

## Comparative Statement of Earnings and Expenditures

| No. | General and Miscellaneous. | 1915 July. | 1916 July. | 1915 August. |
|---|---|---|---|---|
| | | $ c. | $ c. | $ c. |
| 83 | Salaries and expenses of general officers | 8 39 | 248 33 | ..... |
| 84 | Salaries and expenses of general office clerks | 155 00 | 191 66 | 155 00 |
| 85 | General office supplies and expenses | 5 00 | 5 05 | 5 00 |
| 86 | Law expenses | ..... | ..... | ..... |
| 87 | Relief department expenses | ..... | ..... | ..... |
| 88 | Pensions and gratuities | ..... | ..... | ..... |
| 89 | Miscellaneous general expenses | 30 | ..... | 29 90 |
| 90 | Valuation expenses | ..... | ..... | ..... |
| 91 | Amortization of franchises | ..... | ..... | ..... |
| 92 | Injuries and damages | ..... | ..... | ..... |
| 93 | Insurance | 65 95 | 35 39 | 48 20 |
| 94 | Stationery and printing | ..... | 165 02 | 193 37 |
| 95 | Store expenses | ..... | ..... | ..... |
| 96 | Garage and stable expenses | ..... | ..... | ..... |
| 97 | Rent of tracks and facilities | 135 01 | 50 00 | 50 00 |
| 98 | Rent of equipment | 295 95 | 218 70 | 339 15 |
| 99 | Other operations—Dr. | ..... | ..... | ..... |
| 100 | Other operations—Cr. | ..... | ..... | ..... |
| | Total | 665 60 | 914 15 | 820 62 |

| No. | General and Miscellaneous. | Total, 1915. |
|---|---|---|
| | | $ c. |
| 83 | Salaries and expenses of general officers | 8 39 |
| 84 | Salaries and expenses of general office clerks | 1,860 00 |
| 85 | General office supplies and expenses | 175 63 |
| 86 | Law expenses | 10 00 |
| 87 | Relief department expenses | ..... |
| 88 | Pensions and gratuities | ..... |
| 89 | Miscellaneous general expenses | 63 75 |
| 90 | Valuation expenses | ..... |
| 91 | Amortization of franchises | ..... |
| 92 | Injuries and damages | 100 00 |
| 93 | Insurance | 1,119 88 |
| 94 | Stationery and printing | 437 49 |
| 95 | Store expenses | ..... |
| 96 | Garage and stable expenses | ..... |
| 97 | Rent of tracks and facilities | 958 52 |
| 98 | Rent of equipment | 3,756 15 |
| 99 | Other operations—Dr. | ..... |
| 100 | Other operations—Cr. | ..... |
| | Total | 8,489 81 |

by Months, November, 1914, to October, 1916.—Continued.

| 1916 August. | 1915 September. | 1916 September. | 1915 October. | 1916 October. | No. |
|---|---|---|---|---|---|
| $ c. | $ c. | $ c. | $ c. | $ c. | |
| 248 33 | ..... | 248 33 | ..... | 248 33 | 83 |
| 191 66 | 155 00 | 191 66 | 155 00 | 191 66 | 84 |
| 9 91 | 5 00 | 5 00 | 4 75 | 5 00 | 85 |
| ..... | 10 00 | ..... | ..... | ..... | 86 |
| ..... | ..... | ..... | ..... | ..... | 87 |
| ..... | ..... | ..... | ..... | ..... | 88 |
| 5 85 | 2 00 | 18 40 | 90 | 45 | 89 |
| ..... | ..... | ..... | ..... | ..... | 90 |
| ..... | ..... | ..... | ..... | ..... | 91 |
| ..... | ..... | ..... | ..... | 461 00 | 92 |
| 35 39 | 48 20 | 35 39 | 43 37 | 35 39 | 93 |
| 195 68 | 8 41 | 5 35 | 27 51 | 19 86 | 94 |
| ..... | ..... | ..... | ..... | ..... | 95 |
| ..... | ..... | ..... | ..... | ..... | 96 |
| 102 29 | 177 14 | 130 58 | 96 69 | 50 00 | 97 |
| 338 40 | 354 45 | 265 95 | 330 15 | 294 30 | 98 |
| ..... | ..... | ..... | ..... | ..... | 99 |
| ..... | ..... | ..... | ..... | ..... | 100 |
| 1,127 51 | 760 20 | 900 66 | 658 37 | 1,305 99 | |

| Total, 1916. | Increase. | Decrease. | No. |
|---|---|---|---|
| $ c. | $ c. | $ c. | |
| 2,235 00 | 2,226 61 | ..... | 83 |
| 2,170 00 | 310 00 | ..... | 84 |
| 76 36 | ..... | 99 27 | 85 |
| 3 00 | ..... | 7 00 | 86 |
| ..... | ..... | ..... | 87 |
| ..... | ..... | ..... | 88 |
| 44 95 | ..... | 18 80 | 89 |
| ..... | ..... | ..... | 90 |
| ..... | ..... | ..... | 91 |
| 1,061 77 | 961 77 | ..... | 92 |
| 443 64 | ..... | 676 24 | 93 |
| 725 27 | 287 78 | ..... | 94 |
| ..... | ..... | ..... | 95 |
| ..... | ..... | ..... | 96 |
| 1,042 72 | 84 20 | ..... | 97 |
| 2,776 05 | ..... | 980 10 | 98 |
| ..... | ..... | ..... | 99 |
| ..... | ..... | ..... | 100 |
| 10,578 76 | 2,088 95 | ..... | |

## Comparative Statement of Earnings and Expenditures

| No. | Miscellaneous Statistics. | 1914 November. | 1915 November. | 1914 December. | 1915 December. |
|---|---|---|---|---|---|
| 101 | Passenger Car Hours | 2,318 | 2,120 | 2,408 | 2,184 |
| 102 | Passenger Car Miles | 24,042 | 21,707 | 24,658 | 22,362 |
| 103 | Total Passengers Carried | 110,990 | 106,851 | 117,571 | 112,446 |
| 104 | Average Daily Receipts | $286 69 | $266 02 | $284 73.8 | $275 90.7 |
| 105 | Average Receipts per Car Hour—Passenger | 3 27 | 3 23.5 | 3 25.8 | 3 32.8 |
| 106 | Average Receipts per Car Mile—Passenger | 31.5 | 31.6 | 31.8 | 32.5 |
| 107 | Earnings per Passenger | 06.8 | 06.4 | 06.6 | 06.4 |

## Comparative Statement of Earnings and

| No. | Miscellaneous Statistics. | 1915 April. | 1916 April. | 1915 May. | 1916 May. |
|---|---|---|---|---|---|
| 101 | Passenger Car Hours | 2,290 | 2,174 | 2,275 | 2,348 |
| 102 | Passenger Car Miles | 23,376 | 22,261 | 23,390 | 24,043 |
| 103 | Total Passengers Carried | 113,460 | 120,750 | 118,138 | 132,417 |
| 104 | Average Daily Receipts | $291 55.3 | $318 26.9 | $293 23 | $308 77 |
| 105 | Average Receipts per Car Hour—Passenger | 3 42.2 | 3 60.5 | 3 60 | 3 70.9 |
| 106 | Average Receipts per Car Mile—Passenger | 33.5 | 37.2 | 34 | 36.2 |
| 107 | Earnings per Passenger | 06.9 | 06.8 | 06.8 | 06.5 |

## Comparative Statement of Earnings and

| No. | Miscellaneous Statistics. | 1915 September. | 1916 September. | 1915 October. | 1916 October. |
|---|---|---|---|---|---|
| 101 | Passenger Car Hours | 2,123 | 2,300 | 2,171 | 2,311 |
| 102 | Passenger Car Miles | 21,743 | 23,552 | 22,230 | 23,663 |
| 103 | Total Passengers Carried | 108,827 | 129,985 | 111,412 | 109,269 |
| 104 | Average Daily Receipts | $284 98 | $324 25 | $277 51 | $257 50 |
| 105 | Average Receipts per Car Hour—Passenger | 3 40.8 | 3 78.3 | 3 39.3 | 3 04.4 |
| 106 | Average Receipts per Car Mile—Passenger | 33.3 | 36.9 | 33.1 | 29.7 |
| 107 | Earnings per Passenger | 06.6 | 06.7 | 06.6 | 06.4 |

by Months, November, 1914, to October, 1916.—Continued.

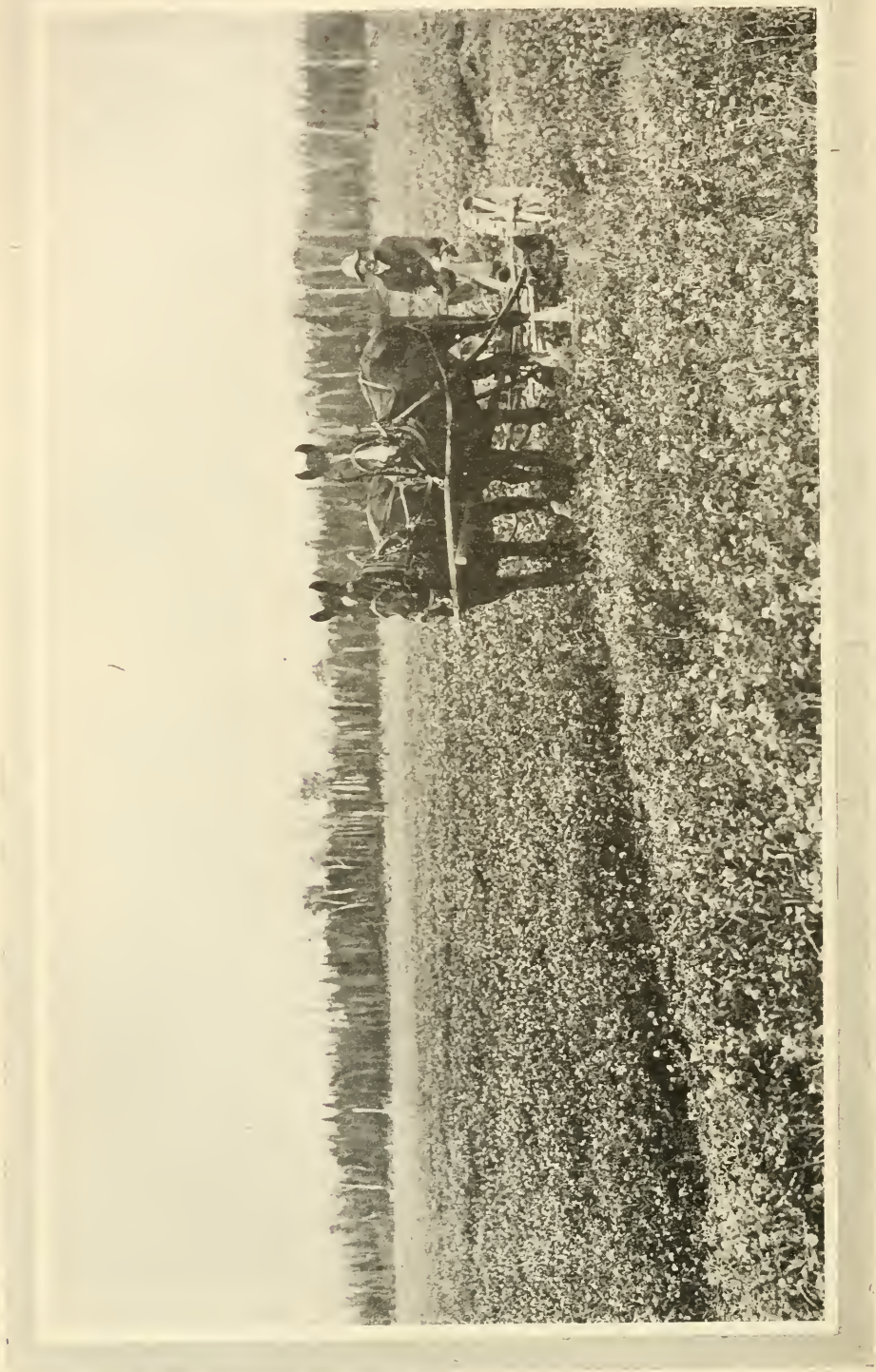
| 1915 January. | 1916 January. | 1915 February. | 1916 February. | 1915 March. | 1916 March. | No. |
|---|---|---|---|---|---|---|
| 2,423 | 2,138 | 2,185 | 1,986 | 2,411 | 2,215 | 101 |
| 24,813 | 21,892 | 22,373 | 20,313 | 24,690 | 22,681 | 102 |
| 110,436 | 98,164 | 100,479 | 97,047 | 111,989 | 115,991 | 103 |
| $268 05.7 | $255 06.4 | $265 64.1 | $266 99.6 | $277 00.7 | $287 69.6 | 104 |
| 2 95.9 | 3 04.3 | 3 03.2 | 3 09.5 | 3 12.3 | 3 36.3 | 105 |
| 28.9 | 29.7 | 29.6 | 30.3 | 30.5 | 32.9 | 106 |
| 06.5 | 06.6 | 06.5 | 06.3 | 06.7 | 06.4 | 107 |

Expenditures by Months, etc.—Continued.

| 1915 June. | 1916 June. | 1915 July. | 1916 July. | 1915 August. | 1916 August. | No. |
|---|---|---|---|---|---|---|
| 2,239 | 2,284 | 2,344 | 2,346 | 2,139 | 2,379 | 101 |
| 22,932 | 23,383 | 24,002 | 24,023 | 21,908 | 24,361 | 102 |
| 117,211 | 135,454 | 130,877 | 138,709 | 116,512 | 142,813 | 103 |
| $303 04 | $331 68 | $331 62 | $335 08 | $304 59 | $344 10 | 104 |
| 3 64 | 3 96.6 | 3 87.5 | 4 04.3 | 3 77.6 | 4 10.5 | 105 |
| 35.5 | 38.7 | 37.8 | 39.5 | 36.9 | 40.1 | 106 |
| 06.9 | 06.8 | 06.9 | 06.8 | 06.9 | 06.7 | 107 |

Expenditures by Months, etc.—Concluded.

| 1915 Total. | 1916 Total. | Increase. | Decrease. | No. |
|---|---|---|---|---|
| 27,326 | 26,785 | ..... | 541 | 101 |
| 280,157 | 274,241 | ..... | 5,916 | 102 |
| 1,367,902 | 1,439,896 | 71,994 | ..... | 103 |
| $288 92.7 | $297 64.3 | $8 71.6 | ..... | 104 |
| 3 38.8 | 3 55.6 | 16.8 | ..... | 105 |
| 33 | 34.7 | 1.7 | ..... | 106 |
| 06.7 | 06.6 | ..... | $0 00.1 | 107 |



Crop of Clover. Farm of Mr. E. Lamb. South half Lot 7. Con. 3, Township Dack.

# NIPISSING CENTRAL RAILWAY

## Statement Showing Investment in Road and Equipment, November 1st, 1915, to October 31st, 1916.

| | | |
|---|---|---|
| Grading | $5,865 63 | |
| Ballast | 84 09 | |
| Ties | 32 04 | |
| Rails, Fastenings and Joints | 904 05 | |
| Paving | 600 00 | |
| Poles and Fixtures | Cr. 6 00 | |
| Distribution System | 42 61 | |
| | | $7,522 42 |
| *Detail of Charges.* | | |
| Paving Whitewood Avenue, New Liskeard | $600 00 | |
| Sidings—Northern Customs Concentrators, Limited | 1,217 19 | |
| Market spur, Haileybury | 28 14 | |
| Siding, Right-of-Way Mines | 417 19 | |
| Spur to loading dock, Haileybury | 5,259 90 | |
| | | $7,522 42 |

## NIPISSING CENTRAL RAILWAY COMPANY

### Statement of Wages paid Employees for Year ending October 31st, 1916

| | | |
|---|---|---|
| McDonald, K. | Superintendent | $2,020 00 |
| Crouch, R. J. | Cashier | 1,310 00 |
| Miller, N. A. | Stenographer | 620 00 |
| Stewart, W. F. | Land Agent | 900 00 |
| Brooks, Mrs. A. | Cleaning | 27 50 |
| Duval, Mrs. T. | " | 5 00 |
| Andrews, Mrs. H. | " | 32 50 |
| Mercier, A. | Sanitary Work | 3 00 |
| Montgomery, A. | Conductor | 1,001 76 |
| Murray, D. R. | " | 997 92 |
| Holden, E. | " | 1,150 88 |
| McAuley, A. | " | 794 08 |
| Anderson, G. | " | 729 12 |
| McDonald, A. A. | " | 1,186 90 |
| Curry, T. W. | " | 1,142 81 |
| Presley, W. | " | 726 27 |
| Noble, J. | " | 1,091 73 |
| Normandy, B. | " | 377 65 |
| Mills, J. G. | " | 384 42 |
| Kilgour, A. H. | " | 5 00 |
| Doughty, J. | " | 184 25 |
| McRae, A. J. | Motorman | 1,124 64 |
| Quinn, P. | " | 1,190 24 |
| Finlay, F. | " | 1,195 52 |
| Morrel, J. A. | " | 432 64 |
| Lyons, H. G. | " | 1,104 32 |
| Parks, W. | " | 1,168 28 |
| Richardson, R. | " | 976 02 |
| Garrison, T. | " | 986 98 |
| McIsaac, N. | " | 823 18 |
| Carmichael, W. | " | 108 30 |
| Hoppins, G. | " | 636 64 |
| Lemieux, P. | " | 584 80 |
| Beer, F. | " | 498 47 |
| Johnston, W. | " | 225 75 |
| Nickason, G. | " | 202 74 |

STATEMENT OF WAGES PAID EMPLOYEES, ETC.—*Continued.*

| | | | |
|---|---|---|---|
| Moodie, F. | Switchman | 530 54 | |
| Brooks, A. W. | " | 254 00 | |
| Peterson, C. | " | 280 49 | |
| Dennison, S. | " | 180 62 | |
| Decker, E. | Laborer | 6 40 | |
| | | | $27,201 36 |

MAINTENANCE.

| | | | |
|---|---|---|---|
| Andrews, H. | Line Foreman | $532 26 | |
| Forrest, D. | Barn Foreman | 540 00 | |
| McDonald, R. | " | 493 55 | |
| Davies, J. H. | S.S. Operator | 960 00 | |
| Warner, J. | " | 730 32 | |
| Christefolo, H. | " | 60 00 | |
| McQuaig, J. | " | 777 42 | |
| Draper, J. | Barnman | 1,078 14 | |
| Hoppins, G. | " | 54 04 | |
| Quinn, G. | " | 50 00 | |
| Moodie, F. | Arm. Winder | 538 50 | |
| Stewart, L. | " | 54 45 | |
| Carmichael, W. | Lineman | 303 90 | |
| Gagnon, L. | " | 279 90 | |
| Mills, J. G. | " | 80 87 | |
| Hagar, W. | " | 97 50 | |
| Harper, E. A. | Cleaner | 370 00 | |
| Curry, W. J. | " | 172 26 | |
| Dunn, G. | " | 101 35 | |
| Brett, F. | Carpenter | 33 58 | |
| Viau, J. | Painter | 26 00 | |
| Lansloot, R. | " | 26 00 | |
| Lato, G. | " | 19 20 | |
| Montgomery, P. | Blacksmith | 817 45 | |
| Finlay, W. | Teaming | 42 00 | |
| Thomas, W. | " | 10 00 | |
| Decker, J. | Laborer | 6 40 | |
| | | | 8,255 09 |

SECTION No. 1.

| | | |
|---|---|---|
| Foreman | $855 96 | |
| Laborers | 1,384 10 | |
| | | 2,240 06 |

SECTION No. 2.

| | | |
|---|---|---|
| Foreman | $1,039 56 | |
| Laborers | 2,338 31 | |
| | | 3,377 87 |
| Total | | $41,074 38 |

## Detail of Nipissing Central Railway Accounts for Fiscal Year, ending October 31st, 1916.

### Alexander & Cable Lithographing Co., Limited, Toronto, Ont.

| | | |
|---|---|---|
| 1257—Embossing and printing passes | $2 35 | |
| 1460—Letterheads | 14 00 | |
| | | $16 35 |

### H. Andrews, North Cobalt.

| | | |
|---|---|---|
| 1343—Award W. C. B., *re* alleged injuries | $104 00 | |
| 1338— " " " | 39 66 | |
| 1379— " " " | 32 11 | |
| 1394— " " " | 400 00 | |
| | | $575 77 |

### Adams & Westlake Co., Chicago, Ill.

| | | |
|---|---|---|
| 1462—Hinges, window lifts | $8 04 | |
| | | $8 04 |

### Municipal Corporation of Bucke.

| | | |
|---|---|---|
| 1253—Taxes, 1915 | $1,633 29 | |
| 1351—Statutory charges on lots | 7 06 | |
| | | $1,640 35 |

### Barber Ellis, Ltd., Toronto, Ont.

| | | |
|---|---|---|
| 1244—Envelopes | $3 25 | |
| 1291—Envelopes | 7 73 | |
| | | $10 98 |

### Cobalt Daily Nugget, Cobalt, Ont.

| | | |
|---|---|---|
| 1254—Subscription and forms | $15 00 | |
| 1397—Time tables | 15 75 | |
| 1398—Advertising *re* lots | 39 00 | |
| 1420—Time sheets | 6 00 | |
| 1464—Tickets, slips | 9 25 | |
| 1526—Time cards | 6 75 | |
| | | $91 75 |

### B. J. Coghlin Co., Ltd., Montreal, Que.

| | | |
|---|---|---|
| 1250—Springs | $1 60 | |
| 1311—Springs | 1 60 | |
| | | $3 20 |

### Chas. Courtmarche, Postmaster, North Cobalt, Ont.

| | | |
|---|---|---|
| 1470—Rent P.O. drawer | $3 00 | |
| | | $3 00 |

### Coleman Fare Box Co., Toronto.

| | | |
|---|---|---|
| 1443—Repairing portable boxes | $39 43 | |
| 1483—Boxes | 63 00 | |
| | | $102 43 |

### Canadian General Electric Co., Limited, Toronto, Ont.

| | | |
|---|---|---|
| 1313—Brushes | $11 10 | |
| 1355—Switches, etc. | 10 34 | |
| 1342—Snap switches | 10 50 | |
| 1372—Armature coils, etc. | 180 45 | |
| 1409—Electrical material | 684 00 | |

CANADIAN GENERAL ELECTRIC CO., LIMITED, TORONTO, ONT.—*Continued.*

| | | |
|---|---|---|
| 1408—Segments, fingers | 23 01 | |
| 1468—Carbon brushes | 10 00 | |
| 1498—Imperial compound | 2 55 | |
| 1485—Commutator rings | 12 50 | |
| 1564—Switches | 9 26 | |
| | | $953 71 |

CANADIAN WESTINGHOUSE CO., LIMITED, HAMILTON, ONT.

| | | |
|---|---|---|
| 1370—Lightning arresters | $24 90 | |
| 1406—Sockets | 3 13 | |
| 1425—Cocks | 6 27 | |
| 1481—Brushes, coils | 120 19 | |
| 1566—Sets mica "V" rings for motor | 9 00 | |
| | | $163 49 |

R. J. CROUCH, CASHIER, NORTH COBALT, ONT.

| | | |
|---|---|---|
| 1248—Commission on advertising | $5 39 | |
| 1400—Expenses, travelling | 4 25 | |
| | | $9 64 |

BERNARD CAIRNS, TORONTO, ONT.

| | | |
|---|---|---|
| 1402—Stamp | $0 80 | |
| | | $0 80 |

COCHRANE HARDWARE, LTD., NORTH BAY, ONT.

| | | |
|---|---|---|
| 1261—Extension ladder | $6 50 | |
| 1309—Wrench and jaw | 2 13 | |
| 1312—H. & C. hooks | 58 | |
| 1381—Screws, brush | 55 | |
| 1479—Wrenches | 3 20 | |
| | | $12 96 |

CANADA PAINT CO., LTD., MONTREAL, P.Q.

| | | |
|---|---|---|
| 1423—Shellac | $10 25 | |
| 1524—Paint | 7 05 | |
| | | $17 30 |

CROUSE, HINDS CO., OF CANADA, LTD., TORONTO.

| | | |
|---|---|---|
| 1344—Headlight globes | $10 00 | |
| 1441—Carbon, clamps, etc. | 63 60 | |
| | | $73 60 |

CANADIAN CONSOLIDATED RUBBER CO., LTD., TORONTO, ONT.

| | | |
|---|---|---|
| 1407—Hose | $6 14 | |
| 1466—Hose bags | 8 00 | |
| | | $14 14 |

CANADIAN EXPRESS CO., NORTH BAY, ONT.

| | | |
|---|---|---|
| 1259—Express charges | $1 00 | |
| 1246— " | 55 | |
| 1390— " | 1 70 | |
| 1438— " | 3 60 | |
| 1461— " | 3 20 | |
| 1477— " | 2 50 | |
| 1540— " | 1 75 | |
| | | $14 30 |

PAUL COLLINS, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 1252—Fare box covers | $7 20 | |
| | | $7 20 |

CURTAIN SUPPLY CO., CHICAGO, ILL.

| | | |
|---|---|---|
| 1293—Curtains | $77 96 | |
| | | $77 96 |

S. B. CLEMENT, C. E. & S. OF M., NORTH BAY, ONT.

| | | |
|---|---|---|
| 1290—Honorarium | $150 00 | |
| | | $150 00 |

DAWSON & CO., LTD., MONTREAL, P.Q.

| | | |
|---|---|---|
| 1295—Trolley wheels | $9 00 | |
| 1346—Brass connectors | 5 58 | |
| 1383—Wire, trolley parts | 40 62 | |
| 1422—Trolley wheels, carbons, etc. | 208 92 | |
| 1487—Lockwashers, bushings, etc. | 261 21 | |
| 1528—Springs, controllers, etc. | 14 92 | |
| | | $540 25 |

DAY & GORDON, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 1411—Services *re* Forrest | $3 00 | |
| 1522—Settlement *re* injuries, Mr. and Mrs. J. Sweeney and Mrs. Badour | 450 00 | |
| 1542—Services rendered | 11 00 | |
| | | $464 00 |

DOMINION EXPRESS CO., NORTH BAY, ONT.

| | | |
|---|---|---|
| 1315—Express charges | $0 40 | |
| 1395— " | 2 45 | |
| 1463— " | 1 30 | |
| 1500— " | 2 90 | |
| 1544— " | 65 | |
| | | $7 70 |

H. DISSTON & SONS, LTD., TORONTO, ONT.

| | | |
|---|---|---|
| 1568—Chromal hacks | $3 78 | |
| | | $3 78 |

FRANK W. DUNCAN, NORTH BAY, ONT.

| | | |
|---|---|---|
| 1256—Uniforms | $399 00 | |
| | | $399 00 |

EMPLOYERS LIABILITY ASSURANCE CORPN., LTD., TORONTO, ONT.

| | | |
|---|---|---|
| 1396—Renewal premium on No. 29251 | $8 75 | |
| | | $8 75 |

ELECTRIC RAILWAY JOURNAL, NEW YORK, N.Y.

| | | |
|---|---|---|
| 1263—Subscription | $4 50 | |
| 1445— " | 6 50 | |
| 1502— " | 4 50 | |
| | | $15 50 |

J. L. ENGLEHART, PRESIDENT, TORONTO, ONT.

| | | |
|---|---|---|
| 1282—Honorarium | $500 00 | |
| | | $500 00 |

C. L. FERGUSON, PAYMASTER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 1251—Pay rolls | $3,135 67 | |
| 1242— " | 3,190 44 | |
| 1289— " | 3,457 14 | |

C. L. Ferguson, Paymaster, North Bay, Ont.—*Continued.*

| | | | |
|---|---|---|---|
| 1300—Honorarium | 115 00 | | |
| 1310—Pay rolls | 3,497 14 | | |
| 1347— " | 3,754 13 | | |
| 1340— " | 3,214 14 | | |
| 1377— " | 3,560 54 | | |
| 1404— " | 3,582 83 | | |
| 1439— " | 3,421 23 | | |
| 1490— " | 3,303 03 | | |
| 1475— " | 3,431 83 | | |
| 1538— " | 3,526 26 | | |
| | | | $41,189 38 |

F. F. Findlay, North Cobalt, Ont.

| | | |
|---|---|---|
| 1330—Donation account, alleged injuries | $25 00 | |
| | | $25 00 |

Mrs. Alex. Fisher, North Cobalt, Ont.

| | | |
|---|---|---|
| 1349—Refund deposit on lots | $10 00 | |
| | | $10 00 |

F. R. Gibson, Haileybury, Ont.

| | | |
|---|---|---|
| 1258—Installing heating system | $110 62 | |
| | | $110 62 |

W. A. Griffin, Superintendent of Traffic, North Bay, Ont.

| | | |
|---|---|---|
| 1292—Honorarium | $125 00 | |
| | | $125 00 |

General Supply Company of Canada, Limited, Ottawa, Ont.

| | | |
|---|---|---|
| 1570—Close R. & L. rad. nipples | $1 44 | |
| | | $1 44 |

B. Greening Wire Company, Limited, Hamilton, Ont.

| | | |
|---|---|---|
| 1374—Galvanized strand | $36 76 | |
| | | $36 76 |

W. A. Graham, Purchasing Agent and Storekeeper, North Bay, Ont.

| | | |
|---|---|---|
| 1298—Honorarium | $125 00 | |
| | | $125 00 |

T. J. Gracey, Auditor of Disbursements and Accountant, Toronto, Ont.

| | | |
|---|---|---|
| 1302—Honorarium | $125 00 | |
| | | $125 00 |

Corporation of Town of Haileybury, Ont.

| | | |
|---|---|---|
| 1492—Taxes, 1914, 1915, 1916 | $1,528 74 | |
| | | $1,528 74 |

"The Haileyburian," Haileybury, Ont.

| | | |
|---|---|---|
| 1424—Advertising lots for sale | $12 25 | |
| | | $12 25 |

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO, TORONTO, ONT.

| | | |
|---|---|---|
| 1260—Laco lamps | $40 00 | |
| 1348—Lamps | 40 00 | |
| 1376—Laco lamps | 40 00 | |
| 1504—Lamps | 39 00 | |
| | | $159 00 |

D. HAMILTON, ASSISTANT ACCOUNTANT, TORONTO, ONT.

| | | |
|---|---|---|
| 1304—Honorarium | $75 00 | |
| | | $75 00 |

IMPERIAL OIL COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 1265—Engine oil | $13 16 | |
| 1317— " | 14 51 | |
| 1350— " | 15 38 | |
| 1378— " | 14 35 | |
| 1415—Curve grease | 11 46 | |
| 1427—Grease | 11 55 | |
| 1472—Oil | 12 80 | |
| 1506— " | 18 90 | |
| 1489—Grease and oil | 27 73 | |
| 1572—Curve grease | 11 43 | |
| | | $151 27 |

INTERNATIONAL REGISTER COMPANY, CHICAGO, ILL.

| | | |
|---|---|---|
| 1413—Register repairs | $4 47 | |
| | | $4 47 |

JACKSON PRESS, KINGSTON, ONT.

| | | |
|---|---|---|
| 1262—Certificates | $10 50 | |
| 1319—Car order slips | 6 00 | |
| 1314—Accident reports | 3 50 | |
| 1359—Letter paper | 16 50 | |
| 1417—Time slips | 7 50 | |
| 1426—Detention reports | 1 50 | |
| 1447—Stationery, etc. | 63 50 | |
| | | $109 00 |

G. C. KUHLMAN CAR COMPANY, CLEVELAND, OHIO.

| | | |
|---|---|---|
| 1574—Wide canvas lined seat, rattan | $130 00 | |
| | | $130 00 |

KERRY & CHACE, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 1316—Services rendered | $41 25 | |
| 1491— " " | 157 27 | |
| | | $198 52 |

GEO. W. LEE, DIRECTOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 1280—Honorarium | $500 00 | |
| 1286— " additional | 175 00 | |
| | | $675 00 |

W. H. LEWIS, HAILEYBURY, ONT.

| | | |
|---|---|---|
| 1440—Tax deeds | $9 10 | |
| | | $9 10 |

FRANK D. LYMAN, MONTREAL, QUE.

| | | |
|---|---|---|
| 1321—Trolley bushings | $52 50 | |
| | | $52 50 |

LYMAN TUBE & SUPPLY COMPANY, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 1352—Trolley poles | $21 00 | |
| 1410—Intermediate No. 2 | 57 90 | |
| 1428—Tubes | 8 54 | |
| 1429—Wheels | 9 00 | |
| 1508—Harps, poles | 42 60 | |
| | | $139 04 |

JOHN MILLEN & SON, LIMITED, MONTREAL, QUE.

| | | |
|---|---|---|
| 1267—Drums for Earl Letriever | $33 00 | |
| 1266—Trolley harps | 21 60 | |
| 1299—Automotoneers and trolley wheels | 47 40 | |
| | | $102 00 |

THE MUIR CAP COMPANY, TORONTO, ONT.

| | | |
|---|---|---|
| 1576—Conductors' and motormen's caps | $44 00 | |
| | | $44 00 |

R. H. MITCHELL, AUDITOR AND CAR ACCOUNTANT, NORTH BAY, ONT.

| | | |
|---|---|---|
| 1294—Honorarium | $150 00 | |
| | | $150 00 |

MINISTER OF INLAND REVENUE, OTTAWA, ONT.

| | | |
|---|---|---|
| 1264—War tax | $12 65 | |
| 1357— " | 13 10 | |
| 1454— " | 14 40 | |
| 1503— " | 15 15 | |
| | | $55 30 |

MIDVALE STEEL COMPANY, PHILADELPHIA, PA.

| | | |
|---|---|---|
| 1297—Tires | $41 90 | |
| | | $41 90 |

JAMES MORRISON BRASS MANUFACTURING COMPANY, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 1323—Brackets and sash stops | $3 64 | |
| 1361—Sockets | 10 80 | |
| 1442—Valves | 6 30 | |
| 1474—Brass stops | 8 96 | |
| | | $29 70 |

DENIS MURPHY, DIRECTOR, OTTAWA, ONT.

| | | |
|---|---|---|
| 1284—Honorarium | $500 00 | |
| | | $500 00 |

W. H. MAUND, SECRETARY-TREASURER, TORONTO, ONT.

| | | |
|---|---|---|
| 1288—Honorarium | $160 00 | |
| | | $160 00 |

JNO. MORROW SCREW & NUT COMPANY, LIMITED, INGERSOLL, ONT.

| | | |
|---|---|---|
| 1380—Rivets | $2 69 | |
| | | $2 69 |

J. G. MILLS, CONDUCTOR, NORTH COBALT, ONT.

| | | |
|---|---|---|
| 1494—Alteration to uniform | $2 50 | |
| | | $2 50 |

WESLEY MCKNIGHT, NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 1354—Uniforms | $528 00 | |
| 1431— " | 24 00 | |
| 1578— " | 682 40 | |
| | | $1,234 40 |

H. H. MCGEE, TRAVELLING AUDITOR, NORTH BAY, ONT.

| | | |
|---|---|---|
| 1308—Honorarium | $50 00 | |
| | | $50 00 |

NORTHERN ONTARIO LIGHT & POWER COMPANY, LIMITED, COBALT, ONT.

| | | |
|---|---|---|
| 1269—Current for power and lighting | $1,265 37 | |
| 1268— " power | 1,334 25 | |
| 1301— " lighting | 3 77 | |
| 1327— " power and lighting | 1,551 93 | |
| 1320— " power and lighting | 1,587 45 | |
| 1365— " power | 1,516 50 | |
| 1356— " lighting | 2 65 | |
| 1382— " power | 1,253 25 | |
| 1388— " lighting | 2 73 | |
| 1403— " power | 1,275 75 | |
| 1444— " power | 1,230 75 | |
| 1465— " power | 1,271 25 | |
| 1476— " lighting | 6 42 | |
| 1512— " power | 1,311 75 | |
| 1495— " lighting | 1 25 | |
| 1509— " power | 1,269 00 | |
| 1546— " power | 1,255 50 | |
| | | $16,139 57 |

NORTHERN ELECTRIC & MFG. CO., LTD., TORONTO, ONT.

| | | |
|---|---|---|
| 1318—Fuse wire and plugs | $1 79 | |
| 1363—Friction tape | 7 50 | |
| 1449—Friction tape | 7 50 | |
| 1493—Tape | 13 25 | |
| 1532—Duncan plugs | 1 13 | |
| 1580—Telephone wire, etc. | 24 26 | |
| | | $55 43 |

NORTHERN LUMBER MILLS, LTD., NORTH COBALT, ONT.

| | | |
|---|---|---|
| 1325—Lumber | $4 55 | |
| 1510— " pickets | 18 01 | |
| 1530— " | 4 75 | |
| | | $27 31 |

NIPISSING MINING CO., LTD., COBALT, ONT.

| | | |
|---|---|---|
| 1255—Rental property | $3 00 | |
| | | $3 00 |

NICHOLSON FILE CO., PORT HOPE, ONT.

| | | |
|---|---|---|
| 1584—Slim taper files | $1 28 | |
| | | $1 28 |

NATIONAL DRUG & CHEMICAL CO. OF CANADA, LTD., TORONTO, ONT.

| | | |
|---|---|---|
| 1582—Yellow petrolatum | $0 60 | |
| | | $0 60 |

NORTHERN CUSTOMS CONCENTRATORS, LTD., COBALT, ONT.

| | | |
|---|---|---|
| 1307—Siding rebate | $615 00 | |
| 1328— " " | 119 00 | |
| 1353— " " | 112 00 | |
| 1430— " " | 371 19 | |
| | | $1,217 19 |

OHIO BRASS CO., MANSFIELD, O.

| | | |
|---|---|---|
| 1432—Rail bonds | $73 14 | |
| | | $73 14 |

PRESTON CAR & COACH CO., LTD., PRESTON, ONT.

| | | |
|---|---|---|
| 1271—Car seat springs | $9 02 | |
| 1345—Castings | 11 00 | |
| 1419—Castings | 25 80 | |
| | | $45 82 |

PILKINGTON BROS., LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 1329—Glass | $43 42 | |
| 1478—Glass | 4 46 | |
| | | $47 88 |

N. L. PIPER RAILWAY SUPPLY CO., LTD., TORONTO, ONT.

| | | |
|---|---|---|
| 1385—Oil tank with pump | $12 00 | |
| | | $12 00 |

A. J. PARR, G. F. & P. A., NORTH BAY, ONT.

| | | |
|---|---|---|
| 1296—Honorarium | $125 00 | |
| | | $125 00 |

PRATT & WHITNEY CO. OF CANADA, LTD., DUNDAS, ONT.

| | | |
|---|---|---|
| 1480—Drills | $4 59 | |
| | | $4 59 |

RICE LEWIS & SON, LTD., TORONTO, ONT.

| | | |
|---|---|---|
| 1412—Postage, invoice August 6th, 1916 | $0 30 | |
| 1446—Shears, snips, etc. | 3 20 | |
| 1482—Dies | 10 31 | |
| | | $13 81 |

W. F. STEWART, LAND AGENT, NORTH COBALT, ONT.

| | | |
|---|---|---|
| 1331—Commission on land sales | $24 50 | |
| 1332— " " " | 7 50 | |
| 1360— " " " | 27 50 | |
| 1401— " " " | 36 75 | |
| 1458— " " " | 43 75 | |
| 1499— " " " | 2 00 | |
| 1548— " " " | 12 85 | |
| | | $154 85 |

STEEL COMPANY OF CANADA, LTD., HAMILTON, ONT.

| | | |
|---|---|---|
| 1287—Screws | $7 86 | |
| 1358—Steel | 2 28 | |
| 1453—Bolts, screws | 3 61 | |
| | | $13 75 |

SOUTHAM PRESS, LIMITED, TORONTO, ONT.

| | | |
|---|---|---|
| 1273—Tickets | $230 00 | |
| 1467—Certificates | 21 75 | |
| 1469—Tariffs | 9 25 | |
| | | $261 00 |

SOUTHAM PRESS, LIMITED, MONTREAL, P.Q.

| | | |
|---|---|---|
| 1451—School tickets | $55 00 | |
| 1484—Forms | 167 50 | |
| | | $222 50 |

SAMSON CORDAGE WORKS, BOSTON, MASS.

| | | |
|---|---|---|
| 1414—Signal cord | $9 43 | |
| | | $9 43 |

WILLIAM SCULLY, MONTREAL, P.Q.

| | | |
|---|---|---|
| 1275—Caps | $42 75 | |
| 1387—Caps | 45 00 | |
| 1497—Buttons | 2 75 | |
| | | $90 50 |

SCYTHES & CO., LTD., TORONTO, ONT.

| | | |
|---|---|---|
| 1416—Duck | $6 50 | |
| | | $6 50 |

PETER SMITH HEATER CO., DETROIT, MICH.

| | | |
|---|---|---|
| 1322—Lubricant | $1 25 | |
| | | $1 25 |

STANDARD STEEL WORKS CO., PHILADELPHIA, PA.

| | | |
|---|---|---|
| 1336—Tires | $311 19 | |
| | | $311 19 |

STANDARD PLANING MILLS, NORTH BAY, ONT.

| | | |
|---|---|---|
| 1433—Lumber | $13 25 | |
| | | $13 25 |

TEMISKAMING & NORTHERN ONTARIO RY., TORONTO, ONT.

| | |
|---|---|
| 1279—Rental Kerr Lake Branch, Aug. 1, 1914 to Oct. 31, 1915.... | $4,591 57 |
| 1281—Rails, oil, etc. | 1,284 61 |
| 1285—Rent for lease of road, etc. | 1,022 10 |
| 1270—Per diem | 347 85 |
| 1272—Duty, express, stationery, etc. | 38 69 |
| 1278—Insurance | 392 58 |
| 1278a—Rent for lease of road, etc. | 1,052 16 |
| 1335—Work performed, material and per diem | 5,218 73 |
| 1337—Insurance | 29 50 |
| 1341—Rent for lease of road, etc. | 1,065 14 |
| 1334—Rent for lease of road, etc. | 1,063 59 |
| 1369—Freight charges, hard coal, oil, stationery, etc. | 368 96 |

TEMISKAMING & NORTHERN ONTARIO RY., TORONTO, ONT.—*Continued.*

| | | |
|---|---|---|
| 1371—Per diem, water for locomotives, etc. | 310 30 | |
| 1375—Rent for lease of road, etc. | 1,059 22 | |
| 1362—Repairing air brakes, etc. | 47 89 | |
| 1364—Duty on tires | 23 33 | |
| 1384—Per diem, soft coal, constables' time and lighting Cobalt station | 604 28 | |
| 1392—Rent for lease of road, etc. | 1,087 38 | |
| 1389—Stationery, freight charges, etc. | 148 74 | |
| 1399—Per diem, constables' time and lighting Cobalt station | 326 00 | |
| 1405—Rent for lease of road, etc. | 1,052 86 | |
| 1421—Freight charges, waste, supplies | 47 28 | |
| 1434—Per diem, repairs to air brakes | 214 59 | |
| 1452—Rent for lease of road, etc. | 1,058 92 | |
| 1448—Duty, stationery | 9 37 | |
| 1435—Express charges, labour | 207 48 | |
| 1455—Freight charges | 8 23 | |
| 1457—Oil, wax, nuts, etc. | 72 61 | |
| 1471—Rent for lease of road, etc. | 1,084 69 | |
| 1473—Per diem | 218 70 | |
| 1456—Per diem | 338 40 | |
| 1488—Ties | 32 04 | |
| 1496—Loading stones, etc. | 88 29 | |
| 1514—Labour and material supplied in construction of Right of Way Mines siding, Cobalt, and construction service, etc., at station landing, M.P. 104 | 687 89 | |
| 1520—Rent for lease of road, etc. | 1,095 84 | |
| 1501—Per diem, ties, etc. | 420 45 | |
| 1507—Patterns | 10 29 | |
| 1511—Rent for lease of road, etc. | 1,078 80 | |
| 1534—Freight charges, duty on seat rattan | 58 18 | |
| 1550—Labour and material supplied cars | 28 36 | |
| 1552—Car service | 294 30 | |
| 1554—Revenue year ended Oct. 31, 1916 | 20,000 00 | |
| 1558—Rent for lease of road, etc. | 1,053 63 | |
| 1560—Constables' time, lighting Cobalt station | 41 41 | |
| 1588—Hard coal, stationery, etc. | 879 57 | |
| | | $50,164 80 |

TEMISKAMING TELEPHONE CO., NEW LISKEARD, ONT.

| | | |
|---|---|---|
| 1277—Telephone service | $3 90 | |
| 1303— " " | 3 35 | |
| 1324— " " | 2 40 | |
| 1367— " " | 3 50 | |
| 1386— " " | 1 20 | |
| 1450— " " | 2 90 | |
| 1486— " " | 2 85 | |
| 1505—Toll service and phone rent | 18 40 | |
| 1556—Telephone service | 45 | |
| 1562— " " | 1 45 | |
| | | $40 40 |

TALLMAN BRASS & METAL CO., HAMILTON, ONT.

| | | |
|---|---|---|
| 1333—Brass rod | $2 30 | |
| | | $2 30 |

WABI IRON WORKS, LTD., NEW LISKEARD, ONT.

| | |
|---|---|
| 1283—Brake shoes | $37 66 |
| 1274—Brake shoes, grate and bar | 33 00 |
| 1305—Trolley wheels and labour | 76 30 |
| 1339—Brake shoes | 52 03 |
| 1326—Trolley wheels | 7 50 |

WABI IRON WORKS, NEW LISKEARD, ONT.—*Continued.*

| | | |
|---|---|---|
| 1373—Coal grates, brake shoes | 37 25 | |
| 1366—Brake shoes | 172 75 | |
| 1391—Brake shoes | 47 25 | |
| 1418—Repairing motor bearings | 9 00 | |
| 1436—Brake shoes | 30 13 | |
| 1437— " " | 27 68 | |
| 1459— " " | 28 05 | |
| 1516— " " | 14 70 | |
| 1536— " " | 85 00 | |
| 1586— " " | 197 65 | |
| | | $855 95 |

WORLD'S ONLY DUSTLESS BRUSH CO., NORTH BAY, ONT.

| | | |
|---|---|---|
| 1276—Brushes | $3 75 | |
| | | $3 75 |

YOUNG CO., LTD., NORTH BAY, ONT.

| | | |
|---|---|---|
| 1368—Dutch Cleanser | $1 00 | |
| 1393—Bon Ami | 3 60 | |
| 1518—Dutch Cleanser | 3 60 | |
| | | $8 20 |

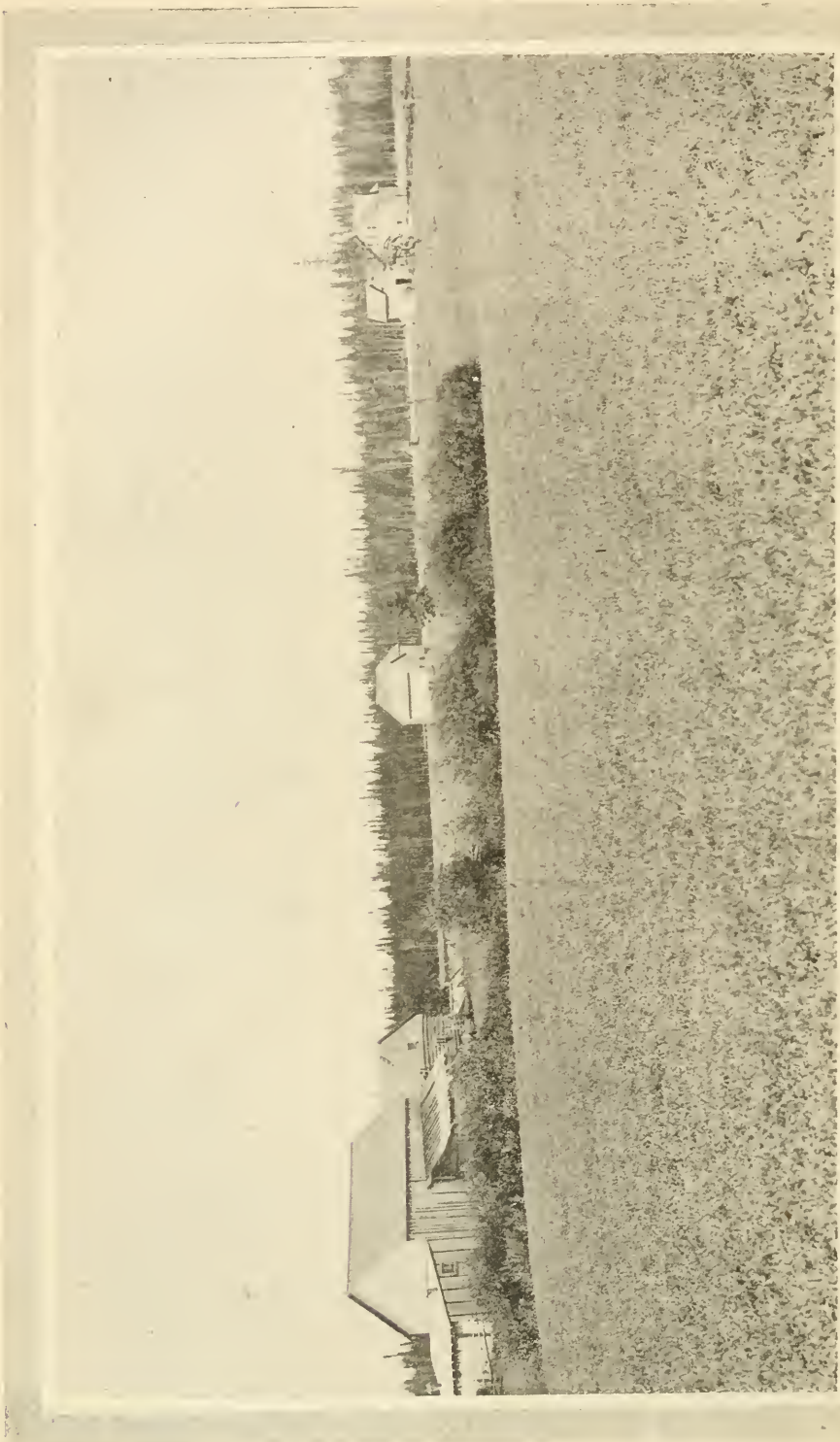
WM. YOUNG, GENERAL ROADMASTER, NORTH BAY, ONT.

| | | |
|---|---|---|
| 1306—Honorarium | $125 00 | |
| | | $125 00 |
| Total | | $123,301 77 |

## RECAPITULATION ACCOUNTS PAYABLE.

NOV. 1ST, 1915 TO OCT. 31ST, 1916.

| | | |
|---|---|---|
| General ledger balance, accounts payable as of Nov. 1st, 1915 | ..... | $60,124 93 |
| Disbursements for year Nov. 1st, 1915 to Oct. 31st, 1916, as per detailed statement | ..... | 123,301 77 |
| Cash payments by Treasurer during year | $150,451 86 | ..... |
| General ledger balance, accounts payable, as of Oct. 31st, 1916 | 32,974 84 | ..... |
| | $183,426 70 | $183,426 70 |



Farm of Mr. H. Netherton, Brentha, Ont. South half Lot 1, Con. 3, Dack. Prize grain exhibited at Ottawa grown on this farm.

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# THE MINING INDUSTRY

IN THAT PART OF

## NORTHERN ONTARIO

SERVED BY THE

## Temiskaming and Northern Ontario Railway

ONTARIO GOVERNMENT RAILWAY

SIR WILLIAM H. HEARST, PREMIER

COMMISSION:
J. L. ENGLEHART, Chairman
DENIS MURPHY GEO. W. LEE
W. H. MAUND, Sec.-Treas.

(Appendix to Annual Report Temiskaming and Northern Ontario Railway Commission)

CALENDAR YEAR 1916

By ARTHUR A. COLE
Mining Engineer

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1917

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

To His Honour Sir John Strathearn Hendrie, K.C.M.G., C.V.O., a Colonel in the Militia of Canada, etc., etc.

*Lieutenant-Governor of the Province of Ontario.*

May it Please Your Honour:

The undersigned has the honour to present to Your Honour Report of the Mining Engineer of the Mining Industry in that part of Northern Ontario served by the Temiskaming and Northern Ontario Railway for the calendar year 1916.

Respectfully submitted,

F. G. Macdiarmid,

*Minister of Public Works and Highways.*

Hon. Finlay G. Macdiarmid,

*Minister of Public Works and Highways,*

Toronto.

Sir,—I have the honour, by direction, to submit to you Report of the Mining Engineer on the Mining Industry, in that part of Northern Ontario served by the Temiskaming and Northern Ontario Railway, for the calendar year 1916.

I have the honour to be,

Sir,

Your obedient servant,

W. H. Maund,

*Secretary-Treasurer.*

## TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION

J. L. ENGLEHART, Chairman.

DENIS MURPHY, Commissioner.

GEO. W. LEE, Commissioner.

W. H. MAUND, Secretary-Treasurer.

A. A. COLE, Mining Engineer.

Teck-Hughes Mine and Mill, Kirkland Lake, Ontario.

# INTRODUCTION

Northern Ontario has just completed another prosperous mining year. The combined production of gold and silver for 1916 amounts to twenty-three million dollars, which is an increase of two and one-quarter millions over the previous year. This result was accomplished in the face of a shortage of men, slow delivery of supplies, particularly machinery, and towards the end of the year to what almost amounted to a famine in coal.

A marked revival in prospecting was noted and many new prospects opened and old ones reopened. Diamond drilling activity was particularly noticeable in Porcupine where every available drill was working to its full capacity. The result has been the extension of the already known deposits, as well as the discovery of new ore fields.

In the preceding report to the Commission a comparative table of prices was given for supplies used in mining and milling previous to the war and on March, 1916. At the end of the year several changes are to be noted. Zinc dust has dropped back from 27 cents to 18 cents.

The cyanide situation was for some time unsettled but the year closed with most of the difficulties overcome. The gold and silver mines of Northern Ontario consume over 100 tons of cyanide per month. This was supplied in about the following proportions:

(1) Two-thirds by the Cassel Cyanide Company of Glasgow, Scotland.

(2) One-third by the Roessler & Hasslacher Company, of New York.

In October, word was received from the Cassel Company that owing to the shortage of men and dearth of raw materials it was possible they would have to cut down their shipments to Canada. These difficulties were overcome by the British War Office. Then, in December, the Roessler & Hasslacher Company gave notice to their Canadian customers that after January 1st, 1917, they would have to discontinue shipments of cyanide to Canada owing to the withdrawal of power from the Chemical Company at Niagara which makes the metallic sodium used in the manufacture of cyanide. This power was required by the Hydro-Electric Power Commission of Ontario, and though generated on the Canadian side of Niagara was previously exported and sold in the United States. The companies depending on this cyanide supply are now being supplied temporarily by the Cassel Company.

Progress in the gold and silver mining may be judged to a certain extent by the dividends paid.

| — | Amount of Dividends and Bonuses paid during 1916. | Total Amount of Dividends paid to December 31st, 1916. |
|---|---|---|
| | $ c. | $ c. |
| Cobalt | 4,958,650 84 | 67,459,852 41 |
| Porcupine | 4,166,000 00 | 9,168,000 00 |
| Kirkland Lake | 260,750 00 | 325,937 50 |
| | 9,385,400 84 | 76,953,789 91 |

## THE GOLD CAMPS

The statistics of Ontario's gold production for 1916 issued by the Ontario Bureau of Mines, show a steady increase over previous years. As in 1915, most of the production this year came from Porcupine, but Kirkland Lake and Munroe district also assisted.

### Porcupine

The following mines produced gold in the Porcupine district during the year:

Hollinger, Dome, McIntyre, Porcupine Crown, Vipond, Schumacher, Dome Lake.

The gold production of the Porcupine camp to the end of the calendar year 1916 is shown in the following table:

PORCUPINE GOLD PRODUCTION, 1910-1916.

| Year. | Ounces. | Value. |
|---|---|---|
| | | $ |
| 1910 | 1,947 | 35,539 |
| 1911 | 765 | 15,437 |
| 1912 | 83,725 | 1,730,628 |
| 1913 | 207,748 | 4,294,113 |
| 1914 | 251,131 | 5,190,794 |
| 1915 | 362,186 | 7,480,901 |
| 1916 | 452,095 | 9,397,536 |
| | 1,359,597 | 28,144,948 |

This year has been one of amalgamations or proposed amalgamations, and the greatest of these was the consolidation of the Hollinger group.

During June a merger was completed of the Hollinger Gold Mines, Limited, Acme Gold Mines, Limited, and Millerton Gold Mines, Limited, along with claim 13147, and the plant of the Canadian Mining & Finance Company, Limited. This aggregation is now known as the Hollinger Consolidated Gold Mines, Limited. The capital of the new company is $25,000,000 and the dividend that was paid every four weeks during the year was $240,000, or a total of $3,126,000 for the year.

An amalgamation was also arranged between the North Thompson and the Porcupine-Vipond mines and this was consummated early in 1917.

A third amalgamation which was also ratified early in 1917 was that of the McIntyre with the McIntyre extension and the Jupiter.

All of these amalgamations will allow for a better and more economic handling of the ore and cutting down of overhead expenses.

The general development in the Porcupine camp has been very satisfactory. Besides considerable additions to the ore reserves of the two larger properties, the Hollinger and the Dome, the year has been noteworthy on account of the important ore bodies located on the 1,000-foot level of the McIntyre Extension, the 100-foot level of the Schumacher, and between the 7th and 9th levels of the Porcupine Crown, in all cases adding materially to the value of the mines.

Around the regular producers a considerable number of promising prospects are being tested out by diamond drill or mining, and besides these many others are operating both in Deloro and Shaw, and some activity is also shown to the north of Porcupine Lake.

Considering present war conditions, it is remarkable that so much activity is being shown in this district, and if the times were normal this would soon assume the proportions of a boom.

### Hollinger.

The Hollinger Consolidated Company has a milling capacity equivalent to 120 stamps, but an extension to the mill, which is now under progress, will add another 100 stamps.

The Company in 1916 milled 601,584 tons of ore and recovered values of $5,073,401, and paid out $3,126,000 in dividends.

Managing Director Robbins estimates that he has 3,988,000 tons of ore of an average value of $8.68 per ton. The estimated gross value of the ore reserves on December 31st, 1916, was $34,185,000 as against $33,837,000 on December 31st, 1915.

A continual advance in the cost of supplies, and the growing shortage and the lowering quality of labour has increased the costs of operation, until they are approximately 50 cents per ton above normal, which means a reduction in profits of from $900 to $1,000 per day.

Actual costs of mining and milling are shown below.

| Account. | Labour. | Stores. | Total. | Per ton Ore Milled. |
|---|---|---|---|---|
| | $ c. | $ c. | $ c. | |
| Mining | 804,083 34 | 513,372 20 | 1,317,455 54 | 2.188 |
| Milling | 187,880 18 | 395,580 52 | 583,460 70 | 0.969 |

Grand total of costs amounted to $2,428,601.72 or $4.033 per ton of ore milled.

The record of production of the Hollinger and Acme mines is shown in the following tabulation:

HOLLINGER GOLD MINES, LTD. AND ACME GOLD MINES, LTD.

| Year. | Tons of Ore Milled. | Values Recovered. | Dividends Paid. |
|---|---|---|---|
| | | $ c. | $ |
| 1911 | 1,000 | 46,082 52 | |
| 1912 | 45,195 | 933,682 00 | 270,000 |
| 1913 | 140,131 | 2,488,022 58 | 1,170,000 |
| 1914 | 211,846 | 2,719,354 47 | 1,170,000 |
| 1915 | 441,236 | 4,205,901 69 | 1,720,000 |
| Totals | 839,408 | 10,393,043 26 | 4,330,000 |

HOLLINGER CONSOLIDATED GOLD MINES, LTD.

| | | | |
|---|---|---|---|
| 1916 | 601,854 | 5,037,401 05 | 3,126,000 |
| Grand Totals | 1,441,982 | 15,430,444 31 | 7,456,000 |

### Dome.

The main or No. 3 shaft has been completed to the 8th level (850 feet) and development has been prosecuted on the 7th, 6th and 5th levels. Shortage of men greatly curtailed development. The production record for 1916 was as follows:—

The production record for the year was as follows:

| 1916 | Tons Milled. | Bullion Produced. | Value per ton. | Total Cost per ton. |
|---|---|---|---|---|
| | | $ | $ | $ |
| January | 31,600 | 175,639 | 5,558 | 2.772 |
| February | 32,040 | 164,027 | 5,119 | 2.716 |
| March | 34,300 | 173,725 | 5,064 | 2.640 |
| April | 37,300 | 177,624 | 4,762 | 2.402 |
| May | 39,400 | 190,230 | 4,828 | 2.447 |
| June | 36,700 | 179,245 | 4,883 | 2.667 |
| July | 38,150 | 179,370 | 4,701 | 2.571 |
| August | 40,010 | 179,531 | 4,487 | 2.553 |
| September | 38,300 | 184,505 | 4,817 | 2.627 |
| October | 40,200 | 181,946 | 4,526 | 2.654 |
| November | 37,900 | 181,172 | 4,780 | 2.895 |
| December | 39,000 | 186,724 | 4,788 | 2.782 |
| | 444,900 | 2,153,738 | 4,841 | 2.634 |

McINTYRE-PORCUPINE.

MILLING RECORD FOR 1916.

| 1916. | Tons Milled. | Average Value. | Production. | Ton Costs. | Profit Operating. |
|---|---|---|---|---|---|
| | | $ c. | $ c. | $ c. | $ c. |
| 1st Quarter | 27,248 | 7 74 | 201,110 00 | 3 85 | 97,128 00 |
| 2nd Quarter | *30,452 | 8 29 | 241,650 05 | 4 23 | 122,064 00 |
| 3rd Quarter | *35,810 | 9 08 | 250,744 69 | 4 93 | 136,083 00 |
| 4th Quarter | *39,369 | 10 62 | 340,194 22 | 4 51 | 208,990 41 |

*The above tonnage figures include ore milled for subsidiary companies.

To the above operating profit must be added the profits earned by milling Jupiter ore, which, under the terms of the late amalgamation, become the property of the McIntyre Company. For the last quarter these amounted to $23,081.60, so that it is certain that the operating profit for the year with these profits included will exceed $600,000 or 20 per cent. on the original capital.

The outstanding feature in the development of this property during the year has been the opening up of an important high grade ore body on the 1,000-foot level of the McIntyre Extension or old Pearl Lake property. This ore which has been followed for about 320 feet, will average about 15 feet in width and carry an average value of $14.00.

The new aerial tram across the Lake from the central shaft to the mill is now ready. It has a capacity several times the present mill capacity, which is 450 tons per day. With the completion of the new shaft the mine will be ready to materially increase production as fast as enlargements are added to the mill.

PORCUPINE-CROWN.

At the end of 1915 the deepest working in this mine was 700 feet, but the deepest ore developed was on the 600-foot level. During 1916 the 900-foot level was reached. The main shaft is down to the 500-foot level, but the 600, 700, 800

and 900-foot levels are reached by a winze. Good ore was encountered in the winze from 750 feet to 920 feet and this ore has not yet been bottomed.

The mill continues to handle about 140 tons per day and during the year treated 51,273 tons which yielded 27,877 ounces gold of a gross value of $574,604.

Dividends were continued at the rate of 12 per cent. on the capital.

The following is a statement of the operating figures for the past three years:

| — | 1914 | 1915 | 1916 |
|---|---|---|---|
| | $ | $ | $ |
| Production | 691,394 | 615,537 | 574,604 |
| Expenses | 386,319 | 316,421 | 304,174 |
| Profit | 305,075 | 299,116 | 270,430 |
| Interest | 2,330 | 5,069 | 4,574 |
| Total Revenue | 307,405 | 304,185 | 275,004 |
| *Less*— | | | |
| Dividends | 240,000 | 240,000 | 240,000 |
| Bonus—Employees | 5,854 | 6,333 | 4,563 |
| Deductions | 245,854 | 246,333 | 244,563 |
| Balance | 61,551 | 57,852 | 30,441 |
| Previous Balance | 150,572 | 212,124 | 267,440 |
| Surplus | 212,123 | 269,976 | 297,881 |
| War Taxes | ..... | ..... | 20,797 |
| Net Surplus | | | 277,084 |

## Porcupine-Vipond-North Thompson Gold Mines.

A basis for amalgamation was completed between the Porcupine-Vipond and the North Thompson properties, and this has been ratified by the shareholders. Operations commenced under the new administration on December 16th, 1916.

The plan of operation as at present projected is to make the North Thompson shaft the permanent working shaft for the combined properties. The Vipond mill will be used and, for the present, ore from the North Thompson shaft will be brought over the surface. It is planned to sink the North Thompson shaft, which is down 500 feet, to the 600-foot level and then drive on this level to connect with the Vipond. The corresponding level in the Vipond will be 640 feet.

During the year the Porcupine-Vipond mill treated 43,041 tons of ore which yielded 8,508 ounces gold, valued at $175,874.

## Schumacher.

During the year this property produced and milled 46,463 tons of ore which yielded 10,844 ounces gold valued at $224,157. The mill has a capacity of about 130 tons per day, but it is proposed to double this in 1917. The first four levels supplied the ore milled, very little development work having yet been done on the 5th and 6th levels.

Most of the workings are north of the shaft, but an important high grade vein was found on the 100-foot level about 200 feet south of the shaft.

*Power.*

The Northern Canada Power Company, Limited, supplies electrical power to all the mines in the Porcupine district.

This Company has two developments on the Mattagami River, namely, Wawaiten Falls, 12 miles south-west, and Sandy Falls, 6 miles north-west from the town of Timmins.

*Wawaiten Falls* plant is located in the Township of Thornloe, at the foot of Lake Kenogamisee. A concrete dam 1,000 feet long at this point diverts the water into a 1,200-foot canal. From intake at foot of canal water is carried by two 9-foot wooden stave pipes, each 1,500 feet long, to two 40-foot diameter surge tanks on top of the hill overlooking the power house. Two 8-foot iron pipes 1,300 feet long, lead from this surge tank down the side of hill direct to the wheels in the power house. The power house is of reinforced concrete and contains two 3,300 h.p. Morgan Smith water-wheels under head of 125 feet, direct connected to two 2,500 k.v.a., 3-phase, 12,000-volt Canadian Westinghouse alternators; two 70 k.w. exciter sets driven by independent water-wheels and Westinghouse switching and switchboard apparatus. The original construction had one 12-foot iron pipe 1,500 feet long, from intake at foot of canal to the surge tank, but this was replaced during the season of 1913-14 by two 9-foot wooden stave pipes of 3-inch Oregon fir, erected by the Pacific Coast Pipe Co., of Seattle, Wash., under the personal supervision of their engineer. There is in course of construction at this point a 4,000 h.p. unit, driven by a 4,750 h.p. turbine. The generator is manufactured by the Canadian Westinghouse Co., and the turbine by the Morgan Smith Co. Another 4,000 h.p. unit is being contemplated.

*Sandy Falls* plant is located in the Township of Mountjoy. A solid concrete dam and intake, approximately 1,500 feet long, diverts the water into one 8-foot steel pipe direct connected to water-wheel with surge tank to protect; and one 8-foot wooden stave pipe, direct connected to water-wheel with surge tank also to protect. The power house is of wood covered on outside and roof with corrugated iron, and on inside completely sheeted with asbestos board, and contains two 1,200 h.p. Morgan-Smith wheels under a head of 33 feet, direct connected to two 950 k.v.a., 3-phase, 12,000-volt, Canadian Westinghouse alternators, with exciters on the same shaft. Switching and switchboard apparatus is of Canadian Westinghouse manufacture.

In addition to the above the Company has just completed the installation of a 2,500 h.p. Canadian General Electric generator, driven by a 3,000 h.p. turbine, manufactured by the I. P. Morris Co., Philadelphia.

The Power Company has thirty-five miles of main and branch transmission lines now operating in the district. There are two separate transmission lines from Wawaiten Falls to the Hollinger and Dome, and one transmission line with two circuits from Sandy Falls to the Dome via the Hollinger, complete with switching towers so that the two plants work continually in parallel.

Conservation dams for supply of water have been erected on the Grassy River, and two dams are now in the course of construction at the head waters of the Mattagami River, on Lakes Minniesiniqua and Mesomekenda, so as to give continuously 20,000 h.p. for the Porcupine camp.

## Kirkland Lake.

Next to Porcupine the Kirkland Lake camp holds a prominent position in the public eye.

Gold was first discovered in this district on the Wright-Hargraves property early in 1912, but little general interest was shown till after a high grade shipment was made in 1913 from the Tough-Oakes property. Slowly but steadily the dis-

trict was developed. A small hydro-electric power development at Charlton delivered electric power to the Tough-Oakes Mine from June, 1914, to March, 1917, but even at high water this plant could only generate 670 h.p., while at low water a much smaller amount was available. The Northern Ontario Light and Power Company, of Cobalt, have now completed a power line into the Kirkland Lake camp and started the delivery of power at the beginning of March, 1917. One thousand five hundred h.p. is now being delivered at the Kirkland Lake substation and this can be increased as required. This installation should prove a large factor in the early and more economical development of this district.

The principal working properties in the district are:

1. Tough-Oakes Gold Mines, Limited.
2. Teck-Hughes Gold Mines, Limited.
3. Wright-Hargraves Mines, Limited.
4. Lake Shore Mines, Limited.
5. Kirkland Lake Gold Mines, Limited.
6. Sylvanite Gold Mines, Limited.
7. LaBelle Kirkland Mines, Limited.
8. Elliott Kirkland Gold Mines, Limited.

### 1. Tough-Oakes Gold Mines, Limited.

This was the first property working in the district, is the farthest advanced with its development, and up to the end of 1916 was the only producer. Nine veins have been located in an area of about 35 acres. The total acreage of the property is 183. Most of the ore produced to date has been taken from Nos. 2, 3 and 6 veins. Other veins containing pay ore are Nos. 7, 9 and 11. Underground development to the end of 1916 totalled 9,347 feet.

The power plant consists of 2 motor-driven compressors (motors being 250 h.p. and 225 h.p.) giving a total of 3,000 cubic feet of free air per minute. Number of drills working is 28 (March, 1917). Total power now used, supplied by the Northern Ontario Light & Power Company, amounts to 880 h.p.

Total men employed 225, of whom 170 are working underground.

The mill has a daily capacity of about 110 tons.

| | |
|---|---|
| Milled in 1916 | 39,865 tons |
| Value | $702,761 |

Total value recovered to end of 1916, $1,458,320.

### 2. Teck-Hughes Gold Mines, Limited.

This property has underground development as follows:

| | |
|---|---|
| Shaft sinking | 796 feet |
| Drifting | 2,600 " |
| Crosscutting | 1,031 " |
| Deepest level | 400 " |
| Men employed—Mining | 37 |
| Surface and construction | 19 |
| Mill | 9 |
| Total | 65 |
| Compressing capacity | 10 drill |
| Total electric installation | 440 h.p. |

The mill has a daily capacity of from 80 to 100 tons. Four machines are now working, two of which are on development of the 400-foot level. During the coming season it is proposed to sink to the 600-foot level, putting on more machines as ore is required for the mill. Development is on three veins, and a crosscut is now being driven north on the 400-foot level to tap a fourth.

### 3. Wright-Hargraves Mines, Limited.

The first gold discovery in the Kirkland Lake district was on this property, but the present company has only been operating since August 1st, 1916. Since that date about 1,000 feet of trenching has been done and two shafts sunk. No. 3 to 100 feet and No. 2 to 70 feet. Sampling is said to show a high grade of milling ore in both shafts. In connection with this work about sixty acres of the property has been cleared. No. 1 shaft was sunk on No. 1 vein, about three years ago by the previous management, and some high grade ore taken out. No. 2 and No. 3 shafts are 750 feet apart on this lead. Present plans are to sink to a depth of 300 feet in No. 2 and No. 3 shafts and connect them at the level. One 4-drill compressor is now running by steam, but it is proposed to install a 10-drill during the coming summer to be run by a 175 h.p. motor.

### 4. Lake Shore Mines, Limited.

The underground development on this property for 1916 consisted of 1,200 feet of drifting and 100 feet of raising. Deepest working is 300-foot level. Power is supplied by a 7-drill compressor. The ore chute has a length of about 300 feet at the 300-foot level and 150 feet at the 100-foot level. A small mill is to be erected this summer, work to be started April 1st. Crushing capacity of the mill is to be 60 tons per day, but this can be increased at any time to 100 tons, which is to be the capacity of the cyanide end of the mill.

Men now employed, 30; drills, 3.

All development so far is on one vein, but a prospecting crosscut is to be started north to prospect for further veins under Kirkland Lake.

### 5. Kirkland Lake Gold Mines, Limited.

A summary of development on this property to the end of February, 1917:

| | | |
|---|---|---|
| Drifting | 916.0 | feet |
| Crosscutting | 617.5 | " |
| Shaft sinking | 410.0 | " |
| Total | 1,943.5 | " |
| Station cutting | 149.0 | cubic yards |
| Sump cutting | 95.0 | " " |
| Total | 244.0 | " " |

Development to the 500-foot level has been extended and sinking to the 6th level is soon to be consummated. The property was formerly equipped with a small plant consisting of two small boilers, locomotive type, three drill compressors and a small hoist, to this has recently been added: one Jenckes' boiler, 125 h.p.; one 10-drill compressor, an electric light plant, and a hoist capable of working to a depth of 800 or 900 feet.

### 6. Sylvanite Gold Mines, Limited.

This property is equipped with a 4-drill air compressor, electrically driven. It is proposed to sink and crosscut on a vein which carries fair values over a small width. Sinking is being done with two machines on contract.

### 7. LaBelle Kirkland Mines, Limited.

This property is situated two miles due north of the Tough-Oakes Mine. It is now well equipped with buildings and a steam driven plant, with an air compressor of 460-foot capacity. The property is being developed at three levels, the deepest being 330 feet.

### 8. Elliott Kirkland Gold Mines, Limited.

This company started operations on December 1st, 1916, and now has a shaft down 65 feet. A small plant has been installed and it is hoped to have it in operation by April 1st, 1917.

## Munro Township

The Croesus Mine was the only producer in this district during the year. From the 477 tons ore milled from this property a yield of 2,495 ounces gold was obtained, valued at $51,578. On the 29th July a devastating forest fire swept the district with large loss of life. Besides losing a number of men, all buildings and equipment of this mine were burned and destroyed. Reconstruction was at once started and the mine is again running with a full force.

## Boston Creek

A number of promising prospects bid fair to yield some gold producers with continued development. The Boston Creek Mining Company has installed a new fuel-oil engine-driven compressor plant in two units, each of which will have a capacity of 400 cubic feet. The plant was built by the Chicago Pneumatic Tool Company. This installation is the first of its kind in this district and its working will be watched with interest by managers who are opening up other properties that are not conveniently situated to obtain hydro-electric power.

The advantages of such an installation are:

(1) Small room required for installation.
(2) Easily installed.
(3) Can be added to unit by unit as further power is required.

## Kowkash and Tashota

East of Lake Nipigon on the National Transcontinental Railway development is proceeding on several gold claims. The principal operating company is the Tash-Orn, which has erected a plant on a promising find on the Wells claim near Tashota. This company is also developing the King Dodds claim near Kowkash, the original discovery in the district.

## Other Gold Camps

Several promising gold finds have been located in the vicinity of Bourkes Station and farther east to the north of Wolf Lake, and during the past summer a good discovery was reported on the Sullivan claim, at *Sesekinika*. Reports of

valuable gold finds were also received from *Gauthier* and *Benoit* Townships and at the end of the year quite a staking rush took place into *Powell* and *Cairo* Townships just south of Matachewan.

DIVIDENDS PAID BY THE PORCUPINE GOLD MINES.

To December 31st, 1916.

| Mine. | Percentage paid during 1916. | Amt. of Dividends and Bonuses paid during 1916. | Total percentage paid to Dec. 31st, 1916. | Total amount of Dividends paid to Dec. 31st, 1916. |
|---|---|---|---|---|
| | | $ c. | | $ c. |
| Dome Mines | 20 | 800,000 00 | 30 | 1,200,000 00 |
| Hollinger Gold Mines | 13 | 3,126,000 00 | 47¾ | 7,456,000 00 |
| Porcupine Crown Mines | 12 | 240,000 00 | 33 | 660,000 00 |
| Rea Mines | ..... | ..... | 6 | 12,000 00 |
| Total | ..... | 4,166,000 00 | ..... | 9,328,000 00 |

DIVIDENDS PAID BY KIRKLAND LAKE GOLD MINES.

| | | | | |
|---|---|---|---|---|
| Tough-Oakes | 10 | 260,750 00 | 12½ | 325,937 50 |

## THE SILVER CAMPS

The silver production of Ontario is made up for the most part by the mines in the Cobalt district; the small remaining portion is recovered in the gold mills, but this only amounts to .4 per cent. of the whole.

THE SILVER PRODUCTION OF THE COBALT CAMP.

| Year. | Ounces. | Value. |
|---|---|---|
| | | $ |
| 1904 | 206,875 | 111,887 |
| 1905 | 2,451,356 | 1,360,503 |
| 1906 | 5,401,766 | 3,667,551 |
| 1907 | 10,023,311 | 6,155,391 |
| 1908 | 19,437,875 | 9,133,378 |
| 1909 | 25,897,825 | 12,461,576 |
| 1910 | 30,645,181 | 15,478,047 |
| 1911 | 31,507,791 | 15,953,847 |
| 1912 | 30,243,859 | 17,408,935 |
| 1913 | 29,681,975 | 16,553,981 |
| 1914 | 25,162,841 | 12,765,461 |
| 1915 | 23,730,839 | 11,742,463 |
| 1916 (Estimated) | 20,000,000 | 13,000,000 |
| | 254,391,494 | $135,793,020 |

Cobalt's production reached its zenith in 1911 and from that year on we may expect a gradual decline owing to the depletion of the mines. This year, however, although there is actually a falling in production of nearly three million ounces, there is an increase in value of over one million dollars. This is due to the phenomenal rise in the price of silver.

The average price during 1915 was 49.7 cents per ounce. Towards the end of that year a rise set in which has continued during 1916 as is shown in the following table:

| Month. | New York. | | London. | |
|---|---|---|---|---|
| | 1915 | 1916 | 1915 | 1916 |
| January | 48.855 | 56.775 | 22.731 | 26.960 |
| February | 48.477 | 56.755 | 22.753 | 26.975 |
| March | 50.241 | 57.935 | 23.708 | 27.597 |
| April | 50.250 | 64.415 | 23.709 | 30.662 |
| May | 49.915 | 74.269 | 23.570 | 35.477 |
| June | 49.034 | 65.024 | 23.267 | 31.060 |
| July | 47.519 | 62.940 | 22.597 | 30.000 |
| August | 47.163 | 66.083 | 22.780 | 31.498 |
| September | 48.680 | 68.515 | 23.591 | 32.584 |
| October | 49.385 | 67.855 | 23.925 | 32.361 |
| November | 51.714 | 71.604 | 25.094 | 34.192 |
| December | 54.971 | 75.765 | 26.373 | 36.410 |
| Year | 49.684 | 65.661 | 23.675 | 31.315 |

New York Quotations—Cents per ounce troy, fine silver.
London—Pence per ounce, sterling silver, 0.925 fine.

The lowest price for the year 1916 was 55.875 on January 3rd, and the highest 76.75 on December 15th. The year closed with the price of silver higher than at any other time in the history of the Cobalt camp.

The war is doubtless accountable for this rise in price. The belligerent countries all have the gold standard, so when hostilities broke out gold vanished from general circulation, being either conserved by the Governments or hoarded by individuals. Then came large orders for silver from the different Governments to take the place, to a certain extent, of the gold, and the rise in value started. Under normal conditions Mexico is the largest silver producer in the world, but owing to the present unsettled state of the country and difficulty in securing supplies, her production is much curtailed and this undoubtedly is another important factor in the price of silver.

The better returns being received by the mines for their ore is already having its effect in increased activity in and around the silver camps, not only are old prospects being given a better trying out than ever before, but some of the old mines that have been closed down for a number of years have been re-opened and again appear on the list of shippers. The results of this new movement should be still more apparent in 1917.

The above are outside influences affecting the silver industry, but there are also internal developments that are of much importance.

On the 1,600-foot level of the Beaver Mine (the deepest working in the district) an interesting development has taken place.

The following quotation taken from the annual report of the company refers to this find. "In No. 2 crosscut to the west, a large vein of from six to eight inches in width was recently cut. This vein shows native silver, and leaf silver is scattered through the wall rock for a distance of about four feet on both sides of the vein." This discovery may have far-reaching effects and will undoubtedly stimulate further exploratory work in this part of the district.

From a metallurgical standpoint the greatest recent development is the introduction of oil-flotation and its application in the concentration of low grade silver ores. It is not at all likely that this method of concentration will supersede the standard methods of concentration already in use in the camp, but in many cases it can be made a valuable addition to the existing plants and the extraction bettered with only a small additional cost.

### Concentration by Flotation.

The Buffalo Mine was the first property to install a flotation plant in the Cobalt Camp. A 50-ton unit was run for eight months, and in that time demonstrated the applicability of oil flotation for the concentration of cobalt ores. Then this was replaced by the present plant of 600 tons daily capacity. The following is a list of the mills that have added flotation plants to their equipment, while several others are still experimenting and are likely to put in plants in the future.

Flotation Plants Installed in Cobalt.

| Mill. | Daily Capacity. Tons. |
|---|---|
| Beaver | 30 |
| Buffalo | 600 |
| Coniagas | 200 |
| Dominion Reduction | 200 |
| McKinley-Darragh | 200 |
| National Mines (King Edward) | 100 |
| Nipissing | 300 |
| Northern Customs | 200 |
| Total capacity | 1,830 |

Concentration by oil flotation will not only make available for treatment large tonnages of tailings now being produced by the mills, but many tailings-dumps will also be re-treated at a profit. The tonnage of such old tailings-dumps will amount to about two and one-half million tons. If we assume that at least four ounces per ton can be saved at a cost of two ounces, we have a profit on this material alone of three and three-quarter million dollars. Another important phase of the situation is that oil flotation will be additional help to make lower grade material treatable at a profit, and so the available tonnage is increased and the life of the camp is materially prolonged.

*Flotation Oils.*

Oils used in the flotation of ores may be roughly divided into two classes (1) collectors, (2) frothers. Many different oils may be used as collectors which will give good results, but in the choice of a frother it has been found that at least a small proportion of pine oil is necessary to give the best results. The demand for pine oil for flotation purposes during the last two years has grown so rapidly that the supply is totally inadequate to meet the market. The price has doubled and the material now obtained is much less pure than formerly. All the pine oil used on this continent is obtained from the southern United States, so that Canadian consumers are dependent on this foreign supply. These facts were laid before the Dominion Government with the result that an investigation was started by the Forest Products Laboratories of the Forestry Department, working in conjunction with the Mines Branch, Department of Mines, Ottawa, to see if pine oil or a suitable substitute could not be produced from Canadian woods. The investigation has already met with considerable encouragement and important results are anticipated.

MILLING IN COBALT DURING 1916.

| Mills and Mines. | Tons Milled. | Concentrates. | Concentration. Ratio. |
|---|---|---|---|
| 1 Beaver | 37,594 | 393 | 96-1 |
| 2 Buffalo | 12,155 | 126 | 96-1 |
| 3 Casey-Cobalt | 13,237 | 239 | 55-1 |
| 4 Cobalt Lake | 16,374 | 506 | 32-1 |
| 5 Cobalt Reduction | 97,255 | 998 | 97-1 |
| 6 Coniagas | 58,127 | 643 | 90-1 |
| 7 McKinley-Darragh | 62,696 | 1,391 | 45-1 |
| 8 Northern Customs— | | | |
| La Rose | 54,229 | 1,242 | 44-1 |
| Right-of-Way | 8,048 | 198 | 41-1 |
| Seneca Superior | 3,399 | 124 | 27-1 |
| Chambers-Ferland | 58 | 4 | 15-1 |
| 9 Penn-Canadian | 33,095 | 472 | 70-1 |
| 10 Seneca Superior | 2,459 | 216 | 11-1 |
| 11 Timiskaming | 32,897 | 349 | 94-1 |
| 12 Trethewey | 18,541 | 286 | 65-1 |
| Total | 450,164 | 7,187 | 65-1 |

| Cyanide Mills. | Tons Milled. | Bullion Produced Oz. |
|---|---|---|
| 13 Dominion Reduction— | | |
| Crown Reserve Mining Co., Ltd | 14,739 | |
| Silver Leaf | 164 | |
| Kerr Lake Mining Co | 36,417 | |
| Peterson Lake Mining Co | 582 | |
| Cobalt Comet Mines, Ltd | 6,945 | |
| Glen Lake Mines | 1,452 | 1,615,386 |
| Dominion Mines | 408 | |
| Drummond Fraction | 955 | |
| Chambers-Ferland Mining Co | 949 | |
| Silver Queen Mines, Ltd | 76 | |
| Hargraves Silver Mines, Ltd | 420 | |
| 14 Nipissing, Low Grade | 76,851 | 2,133,681 |
| 15 O'Brien | 45,000 | 590,000 |
| Total | 184,958 | 4,339,067 |

| | |
|---|---|
| Total tons milled by water concentrating mills | 450,164 |
| Total tons milled by Cyanide Mills | 184,958 |
| Total | 635,122 |

| | |
|---|---|
| Total tons mliled, 1916 | 635,122 |
| " " 1915 | 693,782 |
| " " 1914 | 743,531 |
| " " 1913 | 664,845 |
| " " 1912 | 455,517 |
| " " 1911 | 381,871 |
| " " 1910 | 305,513 |
| " " 1909 | 126,421 |
| " " 1908 | 49,424 |
| Grand Total | 4,056,026 |

NOTE.—The preceding tables do not include the tailings that are being re-treated.

## Buffalo.

The new installation for the treatment of ore in Callow Pneumatic Flotation Machines, at the property of The Buffalo Mines is now in operation.

The plant is for the treatment of the tailing resulting from the concentrating tables; 150 tons per day from the mine and 450 tons per day from the tailing piles will be treated. The ore from the mine is run through the mill as usual and the tailing from the tables sent to the flotation plant. The sand from the tailings piles is loaded to belt conveyors, delivering to the sand storage bin by a 12-ton locomotive crane, handling a 1¼-yard clam shell bucket.

The additional grinding necessary is done in four 5 ft. 6 in x 20 ft. tube mills in closed circuit with Dorr classifiers.

The flotation plant proper consists of four, two-compartment, treble length, rougher cells, and four two-compartment, cleaner cells. Each rougher cell in conjunction with one cleaner cell, has a capacity of 150 tons per 24 hours. The plant makes available as ore all the tailing which has accumulated in years past as well as much mine rock of low grade.

The cleaner cell makes two products, the concentrate and a tailing or "flotation middling." The concentrate is pumped direct to the high grade plant for treatment, while the cleaner tailing is sent to the low grade cyanide plant.

In the high grade plant, the concentrate first has added to it thirty pounds of lime per ton. It is then thickened in a Dorr thickener and dewatered on an Oliver filter. Salt is added partly as a brine wash and partly as a solid.

The concentrate is then dried and after adding further salt and sulphur, is then roasted in a reverberatory roaster.

The calcines are then given an acid wash with a 13 per cent. hydrochloric acid solution. The solution resulting from this acid wash which at times carries as high as twenty-five per cent., is sent to scrap iron precipitation boxes for the recovery of the copper.

After washing the pulp, it is agitated with cyanide solution of fifteen pounds per ton strength. The silver chloride present enters the solution almost instantly. The silver in the pregnant cyanide solution is precipitated by means of sodium sulphide.

The final refining of the silver is accomplished in an oil-fired reverberatory furnace.

A 7-ft. x 9-ft. Holt-Dern roasting furnace is soon to take the place of the present roaster, from which certain economics are expected to result.

## FLOTATION RECORD, BUFFALO MILL.

Week Ending December 10th, 1916.

| Date. | December 4 | | December 5 | | December 6 | | December 7 | | December 8 | | December 9 | | December 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shift. | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night | Day | Dight | Day | Night |
| Assay Heads, Ozs. | 7.0 | 10.0 | 10.2 | 13.2 | 14.0 | 11.2 | 8.4 | 9.0 | 8.2 | 8.6 | 8.8 | 8.4 | ..... | 8.6 |
| Tails | 0.8 | 0.9 | 1.4 | 1.7 | 1.5 | 1.5 | 1.1 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | ..... | 0.8 |
| Middlings | 2.4 | 5.6 | 5.8 | 9.0 | 6.8 | 7.2 | 4.8 | 6.4 | 4.2 | 6.8 | 7.0 | 4.0 | ..... | 8.0 |
| Concentrates | 681.5 | 598.0 | 550.0 | 1,017.0 | 915.0 | 541.5 | 558.5 | 700.0 | 660.0 | 530.0 | 467.5 | 580.0 | ..... | 585.0 |
| Tons Treated | ..... | 95 | ..... | 86 | ..... | 56 | ..... | 100 | ..... | 58 | ..... | 66 | ..... | 32 |
| Extraction | 88.6 | 91.0 | 86.2 | 87.1 | 89.3 | 86.6 | 86.9 | 91.1 | 90.2 | 90.7 | 90.9 | 90.5 | ..... | 90.7 |

Week Ending February, 11th, 1917.

| Date. | February 5 | | February 6 | | February 7 | | February 8 | | February 9 | | February 10 | | February 11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shift. | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night | Day | Night |
| Assay Heads, Ozs. | 9.4 | 7.6 | 8.6 | 10.0 | 8.4 | 7.8 | 10.0 | 9.0 | 10.0 | 9.8 | 8.4 | 8.8 | ..... | 7.6 |
| Tails | 1.3 | 0.8 | 0.9 | 1.2 | 1.2 | 1.1 | 1.2 | 1.1 | 1.4 | 1.1 | 1.5 | 1.7 | ..... | 1.2 |
| Middlings | 22.0 | 18.0 | 17.6 | 30.6 | 14.0 | 24.0 | 16.6 | 59.0 | 34.0 | 24.6 | 23.6 | 36.0 | ..... | 12.0 |
| Concentrates | 462.0 | 499.0 | 520.5 | 740.0 | 688.5 | 1,013.5 | 760.0 | 775.0 | 975.0 | 1,085.0 | 842.5 | 740.0 | ..... | 603.0 |
| Tons Treated | ..... | 336 | ..... | 306 | ..... | 352 | ..... | 308 | ..... | 307 | ..... | 316 | ..... | 180 |
| Extraction | 86.2 | 90.0 | 90.0 | 88.0 | 85.7 | 86.0 | 88.0 | 87.8 | 86.0 | 88.8 | 82.1 | 80.7 | ..... | 84.2 |

### Cobalt Lake Mill.

This mill was closed down on June 11th, 1916, after which any ore produced by the Cobalt Lake Mine was treated in the Cobalt Reduction Mill.

### Cobalt Reduction Company Mill.

This mill is now cyaniding tailings, and during the year treated 51,172 tons, producing therefrom 573,013 ounces silver bullion.

### McKinley-Darragh.*

The feed to the flotation plant consists of slimes resulting from mining operations and primary crushing, which are separated in the jigging plant, and mill slimes resulting from crushing in stamps and one pebble mill. The mill treats 200 tons per day, approximately 50 per cent. of which reaches and is treated in the flotation plant; 93 per cent. of the feed to the flotation plant is finer than 200 mesh. The chief economic minerals recovered by flotation are argentite, proustite, pyrargyrite and metallic silver.

The plant consists of two triple length Callow roughers, operating in parallel and two standard length Callow cleaners, operating in series, the tailing from cleaner No. 1 being recleaned in cleaner No. 2.

The following table gives a summary of typical results:

Flotation Results at the McKinley-Darragh-Savage Mines, Ltd. Averages by Weeks

| Month. | Week. | Heads. Oz. | Tails. Oz. | Concentrates. | Per cent. Extraction. |
|---|---|---|---|---|---|
| June | 2nd | 8.04 | 2.01 | 310 | 75.00 |
| " | 3rd | 8.91 | 1.75 | 386 | 80.30 |
| " | 4th | 7.74 | 1.64 | 363 | 78.80 |
| July | 1st | 8.65 | 1.90 | 334 | 78.00 |
| " | 2nd | 8.03 | 2.10 | 231 | 73.80 |
| " | 3rd | 5.86 | 1.40 | 172 | 76.10 |
| " | 4th | 6.10 | 1.41 | 233 | 77.00 |
| August | 1st | 6.20 | 1.48 | 309 | 76.10 |
| " | 2nd | 6.43 | 1.71 | 269 | 73.40 |
| " | 3rd | 5.88 | 1.66 | 233 | 71.70 |
| " | 4th | 6.71 | 1.53 | 260 | 73.20 |
| September | 1st | 7.68 | 2.55 | 349 | 66.80 |
| " | 2nd | 6.55 | 2.16 | 272 | 67.00 |
| " | 3rd | 5.30 | 1.35 | 206 | 74.50 |
| " | 4th | 6.29 | 1.91 | 211 | 69.60 |
| October | 1st | 8.05 | 2.35 | 238 | 70.80 |
| " | 2nd | 10.05 | 3.74 | 331 | 62.78 |
| " | 3rd | 8.03 | 2.60 | 279 | 67.62 |
| " | 4th | 8.07 | 3.04 | 177 | 62.30 |
| November | 1st | 5.64 | 2.13 | 309 | 62.20 |
| " | 2nd | 4.71 | 1.38 | 248 | 70.70 |
| " | 3rd | 4.73 | 1.53 | 204 | 67.60 |
| " | 4th | 4.65 | 1.70 | 178 | 64.00 |
| December | 1st | 5.36 | 1.60 | 220 | 70.70 |
| " | 2nd | 6.92 | 1.08 | 217 | 84.50 |
| Average | | 6.78 | 1.909 | 262 | 71.37 |

*Notes on Flotation—1916. J. M. Callow. Transactions, A.I.M.E.

## Nipissing.

### High Grade Mill.

The high grade mill ran at full capacity throughout the year, and treated 1,064 tons of Nipissing ore and metallics, assaying 1.800 ounces per ton, and 598 tons of custom ore and metallics, with an average assay of 3.113 ounces per ton.

The precipitate from the low grade mill containing over two million ounces was also refined at the high grade plant.

Shipments of bullion amounted to 192 tons, averaging 998 fine and contained 5,578,162 fine ounces.

The treatment cost was higher on account of the largely increased cost of mercury and cyanide. The active demand for cobalt enabled the company to sell the entire stock of cobalt residue and to contract for the whole of the 1917 output.

Shipments of cobalt residue in 1916 amounted to 2,506 tons, compared with 326 tons in 1915.

### Low Grade Mill.

| | Tons. | Contents, Ounces. |
|---|---|---|
| Ore Treated | 76,851 | 2,275,833 |
| | 106 | 183,508 |
| | 76,957 | 2,459,341 |
| Recovered from above in Cyanide Plant | | 2,133,681 |
| Extraction by Cyanide | | 86.76% |

The ore coming from the lower levels of the mine is more difficult to treat and consumes more cyanide. This, together with rapid rise in prices of all chemicals and supplies and the advance in wages brought the mill costs up to $4.60 per ton, compared with $3.91 in 1915: of this increase $.34 is due to cyanide and $.15 to wages.

The high cost of aluminum dust necessitated the adoption of some other method of precipitation, and after exhaustive experiments, precipitation by sodium sulphide was substituted. A solution of caustic soda is added to the precipitate, which is then desulphurized by circulating it through a small tube mill filled with aluminum ingots. The precipitate is then melted down to fine silver. The new practice is very satisfactory, and is cheaper even should the prices of all supplies drop to the pre-war basis.

Experiments with the flotation of the tailing from the cyanide plant have been carried on throughout the year: the results are not yet satisfactory. The extraction is low, notwithstanding many variations in the method of applying the flotation treatment. By supplementing the treatment with concentration, either before or after flotation, much better results can probably be obtained, and experiments are now being conducted along this line.

CONSUMPTION OF SUPPLIES AT LOW GRADE MILL.

| — | Total Pounds. | Cost per Pound | Total Cost. | Pounds per Ton. | Cost per Ton. |
|---|---|---|---|---|---|
| | | $ | $ c. | | $ |
| Sodium Cyanide | 390,256 | .2547 | 99,411 81 | 5.078 | 1.2936 |
| Lime | 524,245 | .0040 | 2,091 40 | 6.822 | .0272 |
| Caustic Soda | 138,799 | .0509 | 7,062 60 | 1.806 | .0919 |
| Aluminum Dust | 20,400 | .4576 | 9,335 40 | 0.265 | .1215 |
| Aluminum Plates | 1,800 | .2364 | 425 52 | 0.023 | .0056 |
| Aluminum Ingots | 11,946 | .4994 | 5,965 86 | 0.155 | .0776 |
| Pebbles | 425,500 | .0100 | 4,265 06 | 5.537 | .0555 |
| Coal | 2,479,940 | .0032 | 7,978 81 | 32.269 | .1038 |
| Borax | 8,890 | .0823 | 731 95 | 0.116 | .0095 |
| Sodium Sulphide | 150,479 | .0215 | 3,241 30 | 1.958 | .0422 |
| Soda Ash | 100,200 | .0377 | 3,773 86 | 1.304 | .0491 |
| Power K.W.H | 4,532,280 | .01023 | 49,016 97 | 58.975 | .6378 |
| | | | 193,300 54 | | 2.5153 |

SUMMARY OF ORE RESERVES, DECEMBER 31, 1916.

| — | Tons. | Assay. | Ounces. |
|---|---|---|---|
| High Grade Ore | 3,673 | 1,370 | 5,031,232 |
| Mill Ore | 163,721 | 25.2 | 4,121,907 |
| Total | 167,394 | 55 | 9,153,139 |

Insurance on bullion to London has risen from $.50 before the war to $22.50 per $1,000. The cost of mining has increased to $12.53 per ton, compared with $10.02 in the year previous; the cost of producing silver was 24.13 cents compared with 19.06 cents per ounce.

## O'BRIEN.

The O'Brien mill is partly water concentration and partly cyanide. Total production included in concentrates and bullion from cyanidation reached a total of 1,030,000 fine ounces.

The concentrates are treated at the Deloro Smelter.

DIVIDENDS PAID BY COBALT SILVER MINES TO DECEMBER 31, 1916.

| Mining Company. | Percentage Paid During 1916 | Amount of Dividends and Bonuses Paid During 1916 | Total Percentage Paid to 31st Dec., 1915 | Total amount of Dividends Paid to 31st Dec., 1916 |
|---|---|---|---|---|
| | | $ c. | | $ c. |
| Beaver | 3 | 60,000 00 | 32.5 | 650,000 00 |
| Buffalo | ..... | ..... | 282 | 2,787,000 00 |
| Caribou-Cobalt (Drummond) | ..... | ..... | 22.5 | 225,000 00 |
| Casey-Cobalt | ..... | ..... | 25 | 203,249 33 |
| City of Cobalt | ..... | ..... | 23 | 139,231 42 |
| Cobalt Central | ..... | ..... | 4 | 192,845 00 |
| Cobalt Lake | ..... | ..... | 15.5 | 465,000 00 |
| Cobalt Silver Queen | ..... | ..... | 21 | 315,000 00 |
| Cobalt Townsite | ..... | ..... | 97.5 | 966,726 31 |
| Coniagas | 15 | 600,000 00 | 211 | 8,440,000 00 |
| Crown Reserve | ..... | ..... | 345 | 6,102,399 30 |
| Foster | ..... | ..... | 5 | 45,774 00 |
| Hudson Bay (T. & H. B.) | ..... | ..... | 26,000 | 1,940,250 00 |
| Kerr Lake (Holding Co.) | 20 | 600,000 00 | 224 | 6,720,000 00 |
| La Rose (Holding Co.) | 4 | 299,725 40 | 78.5 | 6,882,707 87 |
| Mining Corporation | 27½ | 570,615 00 | 65 | 1,348,740 00 |
| McKinley-Darragh-Savage | 12 | 269,723 04 | 217 | 4,876,474 30 |
| Nipissing Mines Co. (Holding Co.) | 25 | 1,500,000 00 | 249 | 15,340,000 00 |
| Peterson Lake | 7 | 168,127 40 | 17.5 | 420,318 50 |
| Right-of-Way Mines | 1 | 16,855 00 | 14 | 235,965 00 |
| Right-of-Way Mining Co. | ..... | ..... | 65 | 324,643 93 |
| Seneca Superior | 125 | 598,605 00 | 330 | 1,579,817 20 |
| Temiskaming | 9 | 225,000 00 | 68 | 1,684,156 25 |
| Trethewey | 5 | 50,000 00 | 113 | 1,111,998 50 |
| Wettlaufer | ..... | ..... | 45 | 637,465 50 |
| Private Corporations (Estimated) | ..... | ..... | 175 | 3,825,000 00 |
| Totals | ..... | 4,958,650 84 | ..... | 67,459,852 41 |

## Casey Township

Production proceeded at the Casey Mine as usual, until the district was swept by fire on 22nd August, when all buildings and equipment were lost. At the end of the year the new plant is nearing completion.

## South Lorrain

Several companies operated during the year, and the Wettlaufer and Bellellen made shipments.

## Gowganda

Interest in this District has been revived to a certain extent by an important find made on the Miller-Lake-O'Brien Mine. This find was made on the 300 and 350-foot levels, and is one of the best discoveries ever made in the Timiskaming District. The ore will average 25 inches wide and the ore chute is 120 feet long, but the vertical limits have not yet been determined. The grade of the ore is about 4,000 ounces per ton, with considerable mill rock in the adjoining walls.

The mill ran six and one-half months on double shift, and five and one-half months on single shift (12 hours per day), and treated 8,258 tons of ore, producing therefrom 128 tons concentrate.

The mine has shipped 168 tons during the year. A small shipment was also made by the Reeves-Dobie property on Gowganda Lake.

STATEMENT SHOWING SHIPMENTS FROM COBALT DISTRICT, INCLUDING GOWGANDA, ELK LAKE AND SOUTH LORRAIN.

(In tons of 2,000 lbs.)

| Year. | Cobalt. | Gowganda. | Elk Lake. | S. Lorrain. | Totals. |
|---|---|---|---|---|---|
| 1904 | 158.55 | ..... | ..... | ..... | 158.55 |
| 1905 | 2,336.01 | ..... | ..... | ..... | 2,336.01 |
| 1906 | 5,836.59 | ..... | ..... | ..... | 5,836.59 |
| 1907 | 14,851.34 | ..... | ..... | ..... | 14,851.34 |
| 1908 | 25,362.10 | ..... | ..... | 43.25 | 25,405.35 |
| 1909 | 29,942.99 | 2.00 | ..... | 112.59 | 30,057.58 |
| 1910 | 33,976.97 | 486.68 | 20.00 | 226.64 | 34,710.29 |
| 1911 | 24,921.71 | 267.00 | 4.00 | 530.51 | 25,733.22 |
| 1912 | 21,631.79 | 333.10 | ..... | 478.00 | 22,442.89 |
| 1913 | 20,916.16 | 192.90 | ..... | 120.00 | 21,229.06 |
| 1914 | 18,220.71 | 138.80 | 10.86 | 49.46 | 18,419.83 |
| 1915 | 15,944.82 | 119.41 | ..... | ..... | 16,064.23 |
| 1916 | 15,594.88 | 174.55 | ..... | 64.48 | 15,813.01 |
| Totals ... | 229,694.62 | 1,714.44 | 34.86 | 1,624.93 | 233,057.95 |

ORE SHIPMENTS FROM COBALT SILVER DISTRICT FOR CALENDAR YEAR 1916.

| Mine. | Jan. | Feb. | March. | April. | May. | June. | July. | August. | Sept. | Oct. | Nov. | Dec. | Totals. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Alladin | ..... | ..... | 23.25 | ..... | ..... | 26.77 | ..... | 25.20 | ..... | 20.50 | ..... | 22.30 | 118.02 |
| 2. Beaver | 57.26 | 33.73 | 73.55 | 38.54 | 16.62 | 47.87 | 23.33 | 52.61 | 35.11 | 40.77 | ..... | 69.08 | 488.47 |
| 3. Buffalo | 93.80 | 37.69 | 62.64 | 62.55 | 31.28 | ..... | 70.55 | ..... | ..... | ..... | 31.69 | 32.47 | 422.67 |
| 4. Cobalt Comet—By Dom. Red. Co. | 44.00 | 55.00 | 54.00 | 84.37 | 54.75 | 82.38 | 61.53 | 52.47 | 31.25 | 64.38 | 49.13 | 61.88 | 695.14 |
| 5. Coniagas | 60.76 | 84.21 | 30.64 | 86.37 | 110.83 | 68.29 | 70.12 | 71.23 | 79.72 | 74.20 | 104.70 | 56.40 | 897.47 |
| 6. Crown Reserve—By Dom. Red. Co. | 65.12 | 81.40 | 119.89 | 124.88 | 103.61 | 121.91 | 91.07 | 77.66 | 46.25 | 95.27 | 72.70 | 91.57 | 1,091.33 |
| 7. Hudson Bay | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 30.31 | ..... | 70.98 | 30.52 | 131.81 |
| 8. Kerr Lake—By Dom. Red. Co. | 66.88 | 83.60 | 112.46 | 128.25 | 113.50 | 155.48 | 93.53 | 110.00 | 47.50 | 97.85 | 74.67 | 94.05 | 1,177.77 |
| 9. Kerr Lake Mining Co. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 30.23 | ..... | ..... | 30.23 |
| 10. La Rose | 135.90 | 87.09 | 152.94 | 87.59 | 96.02 | 130.75 | 135.15 | 130.88 | 91.18 | 126.98 | 87.32 | 43.70 | 1,305.50 |
| 11. Mining Corporation of Canada | 121.19 | 207.10 | 225.53 | 288.07 | 159.07 | 298.42 | 107.31 | 183.20 | 38.09 | 36.96 | 94.20 | 107.25 | 1,866.39 |
| 12. McKinley-Darragh | 76.47 | 207.86 | 153.80 | 163.09 | 333.34 | 195.54 | 201.39 | 214.68 | 130.89 | 167.53 | 166.64 | 165.37 | 2,176.60 |
| 13. Nipissing | 196.11 | 65.52 | 130.25 | ..... | 64.69 | ..... | 131.95 | 539.66 | 615.27 | 649.18 | 535.70 | ..... | 2,928.33 |
| 14. O'Brien | ..... | ..... | 36.59 | ..... | 42.99 | 31.00 | 31.77 | ..... | 33.00 | 64.91 | 33.00 | ..... | 273.26 |
| 15. Penn-Canadian | 90.58 | 35.99 | 48.95 | ..... | 76.45 | 85.76 | 43.74 | ..... | 83.22 | ..... | 54.10 | 41.75 | 560.54 |
| 16. Peterson Lake | 115.98 | 123.08 | 110.55 | 46.95 | 41.77 | 79.11 | ..... | ..... | ..... | ..... | ..... | ..... | 517.44 |
| 17. Right-of-Way | ..... | ..... | 47.82 | ..... | 46.58 | ..... | ..... | 43.71 | 20.00 | 42.03 | ..... | ..... | 200.14 |
| 18. Temiskaming | 63.60 | 38.92 | 30.50 | 39.68 | 68.44 | 42.04 | 60.52 | ..... | 41.55 | ..... | 81.54 | ..... | 466.79 |
| 19. Trethewey | ..... | ..... | ..... | ..... | ..... | ..... | 41.94 | 38.28 | 44.85 | 42.01 | 41.67 | 38.23 | 246.98 |
| Totals | 1,187.65 | 1,141.19 | 1,413.36 | 1,150.34 | 1,359.94 | 1,365.32 | 1,120.16 | 1,583.32 | 1,368.19 | 1,552.80 | 1,498.04 | 854.57 | 15,594.88 |

## Ore Shipments from the Cobalt District to End of 1916.

(In tons of 2,000 lbs.)

| Mine. | Totals to 1916. | 1916 | Totals. |
|---|---|---|---|
| 1. Alladin | ..... | 118.02 | 118.02 |
| 2. Badger | 27.10 | ..... | 27.10 |
| 3. Bailey | 388.07 | ..... | 388.07 |
| 4. Beaver | 2,691.13 | 488.47 | 3,179.60 |
| 5. Buffalo | 7,966.96 | 422.67 | 8,389.63 |
| 6. Casey-Cobalt | 1,829.80 | ..... | 1,829.80 |
| 7. Chambers-Ferland | 3,610.24 | ..... | 3,610.24 |
| 8. City of Cobalt | 2,820.02 | ..... | 2,820.02 |
| 9. Cobalt Lake | 5,930.12 | ..... | 5,930.12 |
| 10. Cobalt Townsite | 8,020.82 | ..... | 8,020.82 |
| 11. Cobalt Comet | 7,997.73 | 695.14 | 8,692.87 |
| 12. Colonial | 456.12 | ..... | 456.12 |
| 13. Coniagas | 13,264.30 | 897.47 | 14,161.77 |
| 14. Crown Reserve | 10,992.38 | 1,091.33 | 12,083.71 |
| 15. Foster | 822.58 | ..... | 822.58 |
| 16. Green-Meehan | 251.36 | ..... | 251.36 |
| 17. Hargrave | 491.92 | ..... | 491.92 |
| 18. Hudson Bay | 5,098.25 | 131.81 | 5,230.06 |
| 19. Imperial Cobalt | 14.61 | ..... | 14.61 |
| 20. Kerr Lake | 12,178.27 | 1,208.00 | 13,386.27 |
| 21. King Edward | 776.22 | ..... | 776.22 |
| 22. La Rose | 34,646.04 | 1,305.50 | 35,951.54 |
| 23. Lawson | 75.73 | ..... | 75.73 |
| 24. Lost and Found | 74.00 | ..... | 74.00 |
| 25. Lumsden | 20.00 | ..... | 20.00 |
| 26. McKinley-Darragh | 20,008.28 | 2,176.60 | 22,184.88 |
| 27. Mining Corporation :— | | | |
| Cobalt Lake Mine | 1,445.24 | 1,866.39 | 6,408.32 |
| Townsite City Mine | 3,096.69 | | |
| 28. Nancy Helen | 347.74 | ..... | 347.74 |
| 29. Nipissing | 30,562.88 | 2,928.33 | 33,491.21 |
| 30. North Cobalt | 9.87 | ..... | 9.87 |
| 31. Nova Scotia | 778.90 | ..... | 778.90 |
| 32. O'Brien | 10,081.93 | 273.26 | 10,355.19 |
| 33. Penn-Canadian | 2,516.71 | 560.54 | 3,077.25 |
| 34. Petersen Lake (Leases) | 122.52 | 517.44 | 639.96 |
| Gould | 59.65 | ..... | 59.65 |
| Little Nipissing | 422.50 | ..... | 422.50 |
| Nova Scotia | 121.15 | ..... | 121.15 |
| Seneca Superior | 2,298.66 | ..... | 2,298.66 |
| 35. Provincial | 250.65 | ..... | 250.65 |
| 36. Princess | 3.93 | ..... | 3.93 |
| 37. Red Rock | 45.71 | ..... | 45.71 |
| 38. Right-of-Way | 4,881.07 | 200.14 | 5,081.21 |
| 39. Rochester | 28.30 | ..... | 28.30 |
| 40. Silver Bar | 43.30 | ..... | 43.30 |
| 41. Silver Cliff | 606.69 | ..... | 606.69 |
| 42. Silver Leaf | 252.39 | ..... | 252.39 |
| 43. Silver Queen | 2,214.92 | ..... | 2,214.92 |
| 44. Temiskaming | 6,169.94 | 466.79 | 6,636.73 |
| 45. Trethewey | 6,858.66 | 246.98 | 7,105.64 |
| 46. University | 231.51 | ..... | 231.51 |
| 47. Victoria | .47 | ..... | .47 |
| 48. Violet | 36.00 | ..... | 36.00 |
| 49. Waldman | 38.81 | ..... | 38.81 |
| 50. Wyandoh | 24.15 | ..... | 24.15 |
| 51. Temiskaming Cobalt | 88.45 | ..... | 88.45 |
| Totals | 214,091.44 | 15,594.88 | 229,686.32 |

*Power.*

The following review covers the power situation in the Cobalt District, no new powers having been developed recently. There are four water-power plants owned and operated by the Northern Ontario Light & Power Company, Limited.

| Station. | H.P. Capacity. |
|---|---|
| 1. Matabitchouan | 10,000 |
| 2. Hound Chutes | 4,500 |
| 3. Fountain Falls | 3,300 |
| 4. Ragged Chutes | 5,000 |

1. Matabitchouan Hydro-Electric Plant is located on the Matabitchouan River about 25 miles south-east of Cobalt. The equipment consists of 1875 K.V.A. generating units, operating under a nominal head of 312 feet, with a total capacity of 10,000 h.p., 44,000 volts. The transmission lines consist of two circuits on separate poles extending from the power house to South Lorrain and Cobalt. This plant operates in parallel with the Hound Chutes and Fountain Falls plants. In Cobalt, four electrically driven air compressors convert 3,500 h.p. of this power into compressed air.

2. Hound Chutes Hydro-Electric Plant is located on the Montreal River about six miles south of Cobalt. Its equipment consists of four 375 K.V.A. generators, developing 4,500 h.p., at 11,000 volts. It operates under a nominal head of 33 feet.

3. Fountain Falls Hydro-Electric Plant is located about five miles below Hound Chutes on the Montreal River. The equipment consists of two 1,500 h.p. vertical I.P. Morris turbines directly connected to two 1250 K.V.A., 11,000 volt generators operating under a nominal head of 30 feet.

4. Ragged Chutes Hydraulic Air Compressor Plant is located on the Montreal River three miles south of the Hound Chutes plant. It has a capacity of about 5,000 h.p. compressed air produced by the Taylor system. The air is transmitted in pipes approximately nine miles to the mines in the Cobalt District. The main distributing system consists of 20-inch steel pipes with secondary and service lines of from 12-inch to pipes of smaller diameter.

The Northern Ontario Light & Power Company sells most of the above power in the Cobalt Mining District at $50.00 per h.p. per year.

In order to find a market for the surplus power a transmission line has been constructed north approximately 65 miles from the Cobalt sub-station to a sub-station in the Kirkland Lake Mining District, and the first power was delivered 1st March, 1917.

The equipment of the transmission line consists of thirty-five and forty-foot standard cedar poles, spaced 150 feet between centres, supporting a three-phase copper power line attached to most up-to-date insulators, surmounted by a standard galvanized iron guard wire grounded every tenth pole as a protection against lightning. The poles also hold the company's private telephone circuit. The line is equipped with three standard switch towers spaced at equal distances, or about every fifteen miles, installed to facilitate the location of line trouble.

The sub-station at Kirkland Lake is a substantial concrete structure of ample size to take care of 15,000 h.p. The present line and equipment is designed to

transmit 5,000 h.p. at 44,000 volts, 60 cycles. It will be transformed at the Kirkland Lake sub-station to 2,200 volts for distribution over service lines to customers. The initial load runs from 1,500 to 2,000 H.P.

The principal undeveloped water power now available in the District is located near the head of Lake Timiskaming on the Des Quinzes River, a part of the Ottawa River, about 25 miles north-east of Cobalt. An approximation made from several estimates of this power credits it with 150,000 H.P.

*Smelting and Refining.*

In the early years of the Cobalt camp all shipments of ore had to go out of the country for treatment, most of it going to the United States. Soon Canadian smelters were started which treated high grade ore; and the latest development has been the building of the so-called High Grade Mills at Cobalt, which produce silver bullion by a combination amalgamation-cyanide process.

An examination of the figures for the calendar years 1914 and 1915 shows that the percentage of the silver bullion produced from Cobalt ores was in round numbers:

| — | 1914 % | 1915 % |
|---|---|---|
| Cobalt Mills Amalgamation and Cyanide | 44 | 39 |
| Southern Ontario Smelters | 39 | 45 |
| United States Smelters | 17 | 16 |
| | 100 | 100 |

The sixteen per cent. still going to the United States consists of some high grade ore along with all the low grade material both ore and concentrates shipped, as the Canadian smelters are not equipped to handle this low grade material.

In the high grade mills at Cobalt the silver only is recovered, the cobalt, nickel and arsenic being left in the residue for future treatment or sold for the cobalt content. The Deloro and Coniagas smelters are equipped with complete refineries so that besides producing silver bullion they also produce and market arsenic, cobalt and nickel.

The cobalt and nickel have been produced mostly as oxides, but as there has recently been a call for the metals they are now also produced in that form.

DELORO SMELTING AND REFINING COMPANY, LIMITED.

The Deloro smelter is situated at Deloro, Hastings County, Ontario, one and one-quarter miles by road from Marmora Station, and connected by a railway spur with the Canadian Northern Ontario Railway.

PRODUCTION OF DELORO SMELTER, 1908-1916.

| Year. | Ore Treated Tons. | Silver, Fine Oz. | Cobalt and Mixed Oxides Tons. | Refined Arsenic Tons. |
|---|---|---|---|---|
| Previous to 1913 | 11,065 | 20,339,860 | 500 | 3,275 |
| 1913 | 2,920 | 6,350,500 | 190 | 893 |
| 1914 | 3,612 | 5,207,000 | 300 | 1,038 |
| 1915 | 4,634 | 6,429,794 | 256 | 1,634 |
| 1916 | 3,834 | 5,234,620 | 272 | 1,627 |
| Totals | 26,065 | 43,561,774 | 1,518 | 8,467 |

### Coniagas Reduction Company.

The smelter of the Coniagas Reduction Company is situated at Thorold, Ontario, six miles west of Niagara Falls. The output of the smelter up to the 31st December, 1916, is as follows:

| Year. | Ore Treated Tons. | Silver Fine Oz. | Cobalt Oxide Tons. | Nickel Oxide Tons. | White Arsenic Tons. |
|---|---|---|---|---|---|
| 1908 | 266.80 | 360,683 | 5.5 | 1.5 | 13.5 |
| 1909 | 1,116.90 | 1,659,604 | .9 | ..... | 100.0 |
| 1910 | 2,017.25 | 3,485,243 | 53.8 | 13.2 | 557.7 |
| 1911 | 2,821.50 | 5,770,271 | 60.5 | 17.3 | 766.1 |
| 1912 | 2,288.77 | 4,824,632 | 129.0 | 50.7 | 636.7 |
| 1913 | 2,509.80 | 4,977,012 | 250.6 | 115.6 | 319.4 |
| 1914 | 1,968.78 | 3,865,546 | 171.9 | 124.9 | 399.2 |
| 1915 | 2,541.00 | 3,445,661 | 59.0 | 99.8 | 472.8 |
| 1916 | 2,718.87 | 4,428,913 | 190.4 | 67.6 | 420.8 |
| Total | 18,249.67 | 32,817,565 | 921.6 | 490.6 | 3,686.2 |

During 1915 and 1916 this company also produced 85,350 lbs. metallic arsenic and 174,032 lbs. metallic cobalt. Nickel metal is also produced in shot form.

A considerable quantity of metallic cobalt is now absorbed in the manufacture of the alloy known as Stellite.

The binary alloy of cobalt and chromium was discovered by Elwood Haynes, of Kokomo, Indiana, in 1899. A patent was obtained on it in 1907, but it was not developed till 1910.

Stellite is essentially an alloy of cobalt and chromium. When the chromium does not exceed twenty-five per cent. the alloy is malleable at a bright red heat, and may be forged with proper care into flat or square bars, and easily worked into knife blades and other utensils. This alloy is suitable for tableware, such as knives, forks and spoons. It is practically immune to all chemical solutions excepting aqua regia.

When once polished it holds its lustre indefinitely, and on account of its star-like appearance has been named stellite.

If tungsten is added to the cobalt-chromium alloy it increases its hardness, and when the tungsten content reaches about 10 per cent. the alloy becomes sufficiently hard for lathe tools, and is used for such in the cast form. It turns both steel and iron on the lathe much faster than any tool steel yet known. When the tungsten content reaches 20 per cent. the alloy is harder than any steel yet made, though more brittle than the 10 per cent. alloy.

The use of stellite is of great value to munition work shops as may be judged from the following tests. A stellite tool was tested in a Toronto munition factory where 18-pound shells were being manufactured. A tool of high speed tool steel will ordinarily make the first cut on from 25 to 30 of these shells without regrinding. The stellite tool made 250 cuts before requiring regrinding. In certain instances as many as 300 shells have been roughed before regrinding. Then the steel tool regularly takes two minutes to make this first cut, to run it faster would make it lose its temper. Stellite has no temper to lose and it was found that it could be speeded up till it made the cut in thirty seconds without any loss of efficiency in other ways. The value of stellite in such work is therefore very great.

and yet it is sold at a price only slightly above the price of the best high speed tool steels.

Stellite is made in Canada by the Deloro Smelting and Refining Company, at Deloro, Ontario, and in the United States by the Haynes Stellite Company, of Kokomo, Indiana. It is made up mostly in bars but also in special shapes, such as reamers, dies, etc.

The average monthly consumption of metallic cobalt for this use alone now amounts to about twelve tons.

## NICKEL

The Alexo Mine situated three miles from Porquis Junction on the Porcupine branch of the Temiskaming and Northern Ontario Railway, continued to ship nickel ore during the year to the Mond Nickel Company's smelter at Coniston, Ontario. A statement of shipments for 1916 is given herewith.

NICKEL ORE SHIPMENTS OVER THE T. & N. O. RY. 1916.

| — | Tons. |
|---|---|
| January | 1,227.60 |
| February | 1,026.55 |
| March | 1,041.45 |
| April | 699.75 |
| May | 959.13 |
| June | 848.35 |
| July | 671.15 |
| August | 672.15 |
| September | 384.65 |
| October | 237.00 |
| November | 332.65 |
| December | 347.00 |
| | 8,447.43 |

For some years the Mond Nickel Company has purchased at a uniform rate all nickel ore offered in car load lots, and will probably continue to do so if of suitable composition for their work.

## COPPER

A copper property has been opened up by a Mr. A. Fallahay, at Cedar Lake, about four miles north of Temagami Station. The ore is chalcopyrite. A trial shipment of 20.7 tons was made in September from an open cut on the vein to United States Metals Refining Company, at Chrome, N.J. An analysis of this ore gave the following results:

| | |
|---|---|
| Gold | .005 Ounces. |
| Silver | 1.96 " |
| Copper | 7.95 % |
| Iron | 20.13 % |
| Insoluble | 37.31 % |
| Lime | 1.92 % |
| Sulphur | 15.76 % |
| Arsenic | .07 % |

No nickel is reported in this analysis but similar ore from this property was found to contain half as much nickel as copper.

The property is now under option to Mr. M. J. O'Brien, of the O'Brien Mine, and development work is to start early in 1917.

## ZINC AND LEAD

The Dan Smith zinc-lead property is situated to the south-east of Wolf Lake. It is now under working option to some Toronto interests. Camps have been erected and the property is to have some thorough surface prospecting before mining is commenced. The ore is a coarse zinc-blende and galena in a calcite gangue.

## MOLYBDENITE

Several prospects near Amos, Quebec, have had some work done on them during the summer, but so far no shippers have been developed.

## ASBESTOS

In Deloro Township on the Deloro-Shaw road a promising looking asbestos property is being developed. The fibre is fair and colour good, but extent of deposit has yet to be determined.

## LIMESTONE

Shipments from the Farr quarry near Haileybury were made regularly to the Abitibi Power and Paper Company's plant at Iroquois Falls. They totalled during the year 2,968 tons.

## IRON

The following excerpt is from an article by Mr. Thomas Cantley in the Bulletin of the Canadian Mining Institute for January, 1917:

"In the section of country lying in close proximity to Lake Temagami on the Temiskaming and Northern Ontario Railway, are deposits of stratified magnetites—large quantities of which having been exposed by glacial action lie on the surface to be loaded in cars and only require to be conveyed to a concentrating plant. This ore would probably furnish half its volume in concentrates, running fifty per cent. or more in iron, with no pronounced deleterious elements, while a further very large quantity could be won by open quarry work. Another interesting feature is presented by this district, namely the possibility or even probability, that deeper mining would disclose the presence of large areas of secondary enrichment deposits containing a very large tonnage of really high grade ores. To prove conclusively the existence of such secondary deposits would require a very considerable expenditure of capital under the supervision of competent mining engineers; and this matter is of sufficient importance to warrant the Government of Ontario in giving substantial aid and encouragement to those who control these properties on which large expenditures have already been made without return."

## BARITE

The Langmuir Premier Barite property is situated in Langmuir Township about one half mile from Night Hawk Lake. It is reached by water from Connaught Station on the Porcupine branch of the T. & N. O. Ry. Machinery was brought to this point last summer, but owing to low water could not be transported to the property. In the meantime a small amount of development is being accomplished by hand and a tunnel is being driven on the vein. The vein carries fair silver values in the barite.

## LOGS OF WELLS IN THE DISTRICT

For several years it has been the policy to publish, whenever obtainable, the results of deep well drilling in the hope that in this way information would be put in a permanent form that might be of value in the future development of the country. In this way time and money may at times be saved. Already the logs published have answered a valuable purpose and it is hoped that in future those drilling wells will keep and turn in for publication logs of all wells drilled.

The most important well drilled recently is that from which the Town of New Liskeard draws its auxiliary water supply. At 310 feet the first big flow was struck, but it increased somewhat later. At present the natural flow is approximately 45,000 gallons per day. This is on a head of about 2½ feet.

A pumping test was made with a pump working at the rate of 250,000 gallons per day with the working barrel lowered 12 feet from the top and did not suck air.

A sample of the water on analysis was pronounced very satisfactory.

Samples of drillings taken at different depths were as follows:

100 feet—Clay.

200 feet—Soft white Niagara Dolomite.

230 feet—Still soft material of mostly white to dark gray angular fragments, but with a little in flat dark flakes suggesting shaly limestone.

260 feet—Evidence of banding of light and dark layers shown.

280 feet—Similar to 260 sample with the addition of a few fine grains of transparent quartz.

300 feet—Very fine and of brownish colour. Likely corresponds to sandstone horizon of the Niagara as found at Dawson's Point, where it is 2 ft. thick.

325 feet—Fragments of gray and white colour like typical Niagara but with brown material also present.

350 feet—Soft dolomite similar to last.

370 feet—Deeper brown colour than last. A little quartz in transparent grains.

385 feet—Colour is greenish. Also has grains of quartz. Cataract?

400 feet—Greenish colour, more light coloured material. Selenite present.

430 feet—Dark greenish brown. Tendency to be shaly. Selenite present.

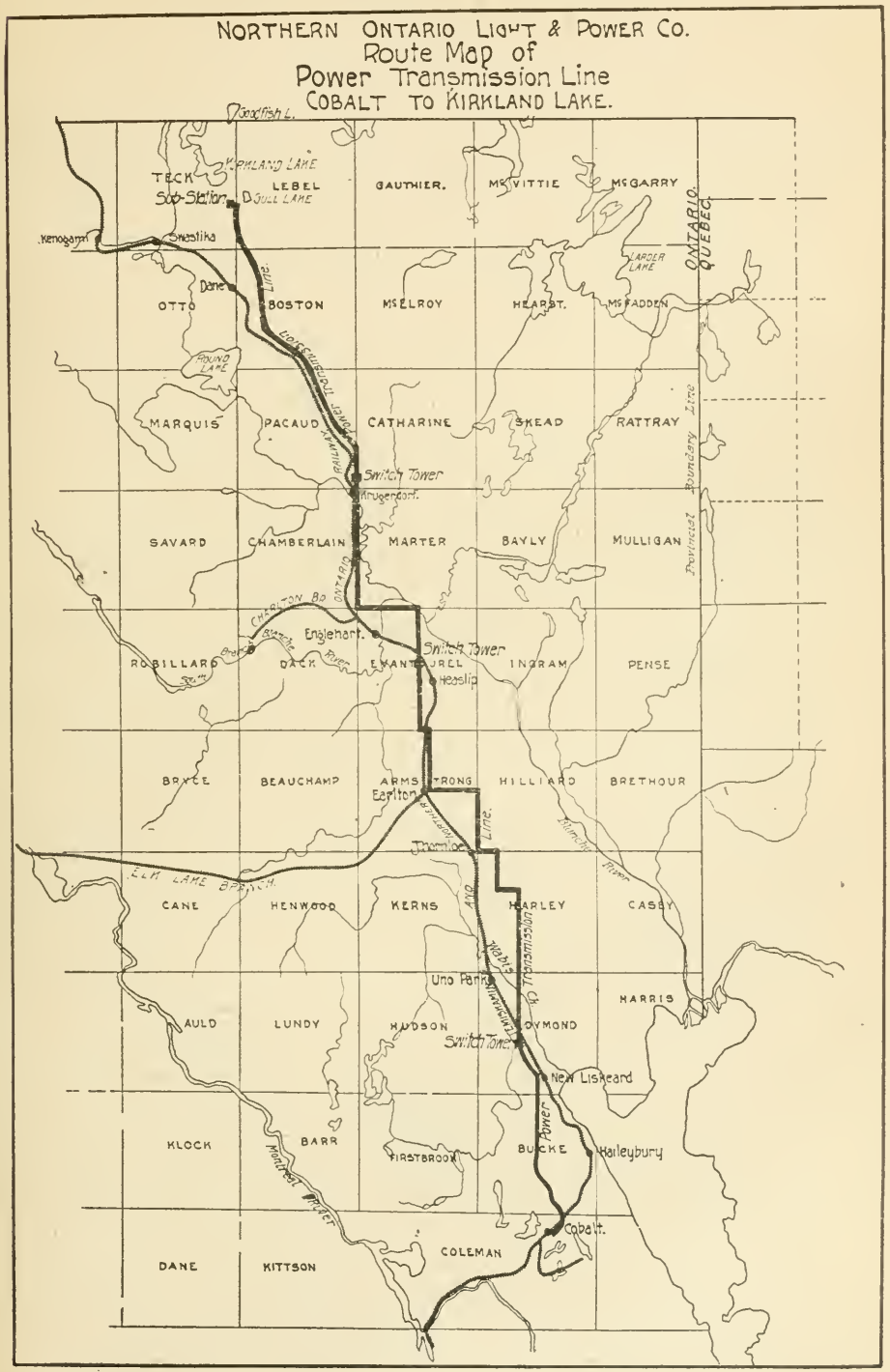
449 feet—Same as previous sample.

## MINING OPPORTUNITIES IN NORTHERN ONTARIO

Along the Temiskaming and Northern Ontario Railway from Cobalt to Porquis Junction, a distance of 125 miles, it was noticeable this year that there was hardly a station from which some mining operations were not being carried on. New districts were being reported from time to time and the older districts were looking better as work proceeded.

Anyone who looked over the unbroken forest of Northern Ontario a dozen years ago and predicted that this district would soon be producing over twenty millions in gold and silver annually would have been put down as a fantastic dreamer; but that figure is surpassed to-day by three million dollars, and the output is continually increasing.

And yet only a small portion of the country has been prospected. Running north-east and north-west from Cobalt and extending to the Arctic Ocean is the great pre-Cambrian shield, the basement formation of the Continent. It contains thousands of square miles and offers to prospectors *Better Chances of Locating Valuable Mineral Deposits Than Can Be Found in Any Other Country in the World.*


NORTHERN ONTARIO LIGHT & POWER CO.
Route Map of
Power Transmission Line
COBALT TO KIRKLAND LAKE.
Opeepeesh L.
KIRKLAND LAKE
TECK
Sub-Station
LEBEL
GAUTHIER.
McVITTIE
McGARRY
ONTARIO
QUEBEC
Kenogami
Swastika
Dane
OTTO
BOSTON
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SAVARD
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Switch Tower
ROBILLARD
DACK
EVANTURELL
INGRAM
PENSE
Heaslip
BRYCE
BEAUCHAMP
ARMSTRONG
HILLIARD
BRETHOUR
Egerton
Thornloe
ELK LAKE BRANCH
CANE
HENWOOD
KERNS
HARLEY
CASEY
Uno Park
HARRIS
AULD
LUNDY
HUDSON
DYMOND
Switch Tower
New Liskeard
KLOCK
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Haileybury
Power
COLEMAN
Cobalt
DANE
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Ninth Annual Report

OF THE

# HYDRO-ELECTRIC POWER COMMISSION

OF THE

## PROVINCE OF ONTARIO

FOR THE YEAR ENDED OCTOBER 31st

## 1916

VOLUME I.

---

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

---

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1917

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*To His Honour,* Colonel Sir John Hendrie, K.C.M.G., C.V.O.,

*Lieutenant-Governor of Ontario.*

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the Ninth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1916.

Respectfully submitted,

Adam Beck,

*Chairman.*

Toronto, Ont., February 17th, 1917.

Colonel Sir Adam Beck, K.B., LL.D.,

*Chairman, Hydro-Electric Power Commission,*

*Toronto, Ont.*

Sir,—I have the honour to transmit herewith the Ninth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1916.

I have the honour to be,

Sir,

Your obedient servant,

W. W. Pope,

*Secretary.*

# HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

COLONEL SIR ADAM BECK, K.B., LL.D., London, Chairman.

HON. I. B. LUCAS, M.P.P., Markdale, Commissioner.

COL. W. K. McNAUGHT, C.M.G., Toronto, Commissioner.

W. W. POPE, Secretary.

F. A. GABY, Chief Engineer.

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Eugenia Falls

# NINTH ANNUAL REPORT

OF THE

# Hydro-Electric Power Commission

## SECTION I

## LEGAL PROCEEDINGS

### ACTS

The following Act to amend *The Power Commission Act* and to confirm certain by-laws and contracts was passed by the Legislature of the Province of Ontario during the Session of 1916.

An Act to amend *The Power Commission Act* and to confirm Certain By-laws and Contracts.

*Assented to 27th April, 1916.*

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

**1.** This Act may be cited as "*The Power Commission Act, 1916.*" Short title.

**2.** Subsection 2 of section 6 of *The Power Commission Act* is amended by striking out all the words therein after the words "Lieutenant-Governor in Council" in the third line. Rev. Stat. c. 39, s. 6, subs. 2, amended.

**3.** Section 6 of *The Power Commission Act* is amended by adding thereto the following subsections:— Rev. Stat. c. 39, s. 6, amended.

(3) Such salaries and remuneration and the travelling and other expenses of the persons appointed or employed by the Commission, as well as any other expenses of the Commission, shall be apportioned by the Commission among, and shall be chargeable to the various works and undertakings carried on by the Commission upon which such persons are employed, but any portion of such salaries or other remuneration and travelling and other expenses which are not properly chargeable to such works or undertakings and which are earned or incurred in the performance of work or services other than those rendered in respect of works or undertakings of the Commission under contract with municipal corporations shall be chargeable and payable out of such moneys as may be appropriated for that purpose by the Legislature. Apportionment of salaries and expenses of officers.

Apportionment to be final.

(4) The apportionment by the Commission of such salaries or other remuneration and travelling and other expenses shall be final.

Commencement of section.

(5) The provisions of this section shall take effect as from the 1st day of January, 1910.

Rev. Stat. c. 39, amended.

**4.** *The Power Commission Act* is amended by adding the following section:—

Appointment of Comptroller.

6*a*.—(1) The Lieutenant-Governor in Council may appoint an officer to be known as the Comptroller of the Commission who shall hold office during the pleasure of the Lieutenant-Governor in Council and shall countersign every cheque issued by the Commission, but before countersigning shall satisfy himself that the issue of the cheque is authorized.

Books and accounts.

(2) The Comptroller shall give such directions as he may deem proper as to the books of account kept by the Commission and shall cause to be kept and entered therein regular accounts according to a system and method approved of from time to time by the Lieutenant-Governor in Council of all sums of money received and paid out by the Commission and of the several purposes for which the same are received and paid, and such books shall be at all times open to the inspection of any person appointed by the Lieutenant-Governor in Council for that purpose, and any such person may take copies or extracts from such books.

Annual financial report.

(3) The Commission, through the Comptroller, shall, before the 15th day of February in each year, make to the Treasurer of Ontario an annual report for the information of the Lieutenant-Governor in Council and for the information of the Assembly, and such report shall contain, among other things, clear and comprehensive statements disclosing and exhibiting—

(*a*) The actual condition as to the amount and character of the assets and liabilities (direct and indirect) of the undertakings conducted by it as on 31st December last preceding;

(*b*) The cash transactions, including receipts and disbursements for the year ending on 31st December last preceding;

(*c*) The revenues, income and interest earned and the amount of the costs, expenses and other items chargeable there against in connection with the operation, maintenance, administration and conduct of the under-

takings controlled by it for the year ending 31st December last preceding;

(*d*) The amounts, with the expected sources of the same, which it is estimated will be received in cash or its equivalent and the payments, loans and advances with the purpose of the same, which it is contemplated shall be made in cash or otherwise, in the next succeeding year;

(*e*) The amounts and particulars of the obligations and liabilities which it is contemplated shall be incurred in the next succeeding year;

(*f*) The securities or evidence of indebtedness which it is contemplated shall be created, issued, sold or otherwise disposed of, together with the method of dealing with the same in the next succeeding year;

and such other matters as may appear to be of public interest in relation to the said Commission or its works, as the Lieutenant-Governor in Council may direct, and such statements shall be in form approved of by the Treasurer of Ontario, and shall contain such information and particulars as he shall require, and shall be certified by the chairman or vice-chairman as true and correct in all particulars.

Other returns by Comptroller.

(4) The Comptroller shall make such other and further reports, and prepare and furnish such other statements to the Treasurer of Ontario as he shall from time to time request or direct.

(5) In case of the illness or absence of the Comptroller or a vacancy in the office, the Lieutenant-Governor in Council may appoint some other person to act as Comptroller, and the person so appointed shall, during such absence or vacancy, possess the powers and perform the duties of the Comptroller.

(6) The accounts of the Commission shall, upon the direction of the Lieutenant-Governor in Council, be from time to time, and at least once every year, audited either by the Auditor for Ontario, or by other auditor or auditors.

(7) The salary of the Comptroller and the expenses of such audits shall be fixed by the Lieutenant-Governor in Council and shall be payable out of such moneys as may be appropriated for the purposes of the Commission by the Legislature, as part of the costs of the administration.

Appointment of sole arbitrator in lieu of Rev. Stat. cc. 35, 39 and 4 Geo. V. c. 31.

**5.** —(1) In lieu of the provisions contained in *The Ontario Public Works Act, The Power Commission Act,* and *The Hydro-Electric Railway Act, 1914,* with respect to the appointment of arbitrators where land or other property is taken or injured by the Commission in the doing of any work under the authority of any of the said Acts, the Chief Justice of the Supreme Court of Ontario, upon the request of the Lieutenant-Governor in Council, may nominate some person who, in his opinion, is skilled in the valuing of real property, and upon such nomination being approved by the Lieutenant-Governor in Council and until such approval is revoked the person so nominated shall become and be the sole arbitrator for the purpose of any arbitration proceedings taken under any of the said Acts to which the Commission is a party, but in all other respects the provisions of the said Acts, including those relating to appeals, shall apply.

Determining compensation before sole arbitrator is appointed.

(2) Until such nomination is made and approved and after such approval is revoked and until another nomination has been made and approved, the compensation to be paid to any person whose property may be taken or injured by the Commission, shall be determined in the same manner as heretofore.

Rev. Stat. c. 39, amended.

**6.** *The Power Commission Act* is amended by adding thereto the following sections:—

Payment over to Commission of moneys appropriated.

14*a*. Where the Legislature has appropriated money for the purposes of the Commission, such money shall be payable out of such appropriation to the Commission from time to time, upon the requisition of the Chairman of the Commission and the direction of the Lieutenant-Governor in Council, in such amounts and at such times as shall be stated in the requisition and direction, and this section shall have effect notwithstanding that there may be sums due from the Commission to the Province and notwithstanding anything in *The Audit Act* contained.

Rev. Stat. c. 23.

Reserve fund.

14*b*. The Commission may set apart out of the moneys coming to its hands from time to time from any municipal corporation, railway company, or distributing company such sums as may be sufficient in the opinion of the Commission to provide for the renewal, reconstruction, alteration and repair of the works constructed and operated by the Commission, and to meet any unforeseen expenditure caused by the destruction or injury of any such works.

Rev. Stat. c. 39, s. 15, amended.

**7.**—(1) Section 15 of *The Power Commission Act* is amended by inserting after the word "Commission" in the first line the words "on account of sinking fund or interest."

(2) Section 15 of the said Act is amended by adding thereto the following subsection:—

(2) The income of the Commission shall be applied to the necessary operating expenses, to the preservation, improvement, supervision, renewal, repairs, maintenance and insurance of its works, and to the payment of the remuneration and expenses of the Commissioners, and the salaries of officers and others employed by the Commission, and to other incidental expenses. Rev. Stat. c. 39, s. 15, amended. Application of income of Commission.

**8**. *The Power Commission Act* is amended by adding thereto the following section:— Rev. Stat. c. 39, amended.

15*a*.—(1) The Commission may, out of any funds in its hands, from time to time purchase such electrical, hydraulic or other machinery, appliances, apparatus and furnishings as may be used in the transmission, distribution, supply or use of electrical power or energy, and may dispose of the same from time to time to municipal corporations and commissions. Commission may purchase and sell supplies.

(2) The Commission may undertake and carry out the installation, construction, erection or purchase of supplies for any plant, machinery, wires, poles and other things for the transmission, distribution, supply or use of electrical power or energy for light, heat or power purposes, by a municipal corporation or commission which has entered into a contract with the Commission for the supply of electrical power or energy, and the Commission may charge and collect from such corporation or commission the cost of any work done or service rendered by the Commission, its officers, servants or workmen under this subsection. Doing work for contracting municipalities.

(3) This section shall take effect as from the 31st day of October, 1910. Commencement of section.

**9**. Section 18 of *The Power Commission Act* is amended by adding thereto the following subsection:— Rev. Stat. c. 39, sub. 8, amended.

(8) Where a corporation has entered into a contract with the Commission for the supply of electrical power or energy, the debentures issued for any works for the distribution and supply of such electrical power or energy by the corporation, shall not be included in ascertaining the limit of the borrowing powers of the corporation as prescribed by *The Municipal Act*. Debentures of contracting municipalities not included in ascertaining limit of borrowing powers. Rev. Stat. c. 192.

**10**. Section 37 of *The Power Commission Act*, as enacted by section 12 of *The Power Commission Act, 1915*, is repealed and the following substituted therefor:— 5 Geo. V. c. 19, s. 12, amended.

37.—(1) The Commission may, with the approval of the Lieutenant-Governor in Council, make regulations as to the design, construction, installation, protection, operation, maintenance and inspection of works, plant, machinery, apparatus, Regulations as to electrical works.

appliances, devices, material and equipment for the generation, transmission, distribution, connection and use of electrical power or energy by any municipal corporation or commission and by any railway, street railway, electric light, power or transmission company, or by any other company or individual generating, transmitting, distributing or using electric power or energy, or whose undertaking, works or premises are electrically connected with any plant for the generation, transmission or distribution of electric power or energy, and the Commission may impose penalties for the breach of any such regulations.

Order of Commission as to work to be done.

(2) The Commission may, at any time, order such work to be done in the installation, removal, alteration or protection of any of the works mentioned in subsection 1, as the Commission may deem necessary for the safety of the public, or of workmen, or for the protection of the property damaged by fire or otherwise, and pending the performance of such work, or in case of noncompliance with the regulations or with any order of the Commission, may order the supply of electrical power or energy to be cut off from such works.

Ordering cutting off of supply.

Inspectors and their duties.

(3) The Commission may appoint inspectors for the purpose of seeing that the regulations and orders of the Commission, made under the authority of this section, or any other provision of this Act, are carried out and may collect the fees to be paid by any municipal corporation or commission, or by any company, firm, or individual under the regulations or by order of the Commission, and may provide for the payment of the remuneration, travelling and other expenses of the Inspector out of the fines and fees so collected or out of the funds appropriated for carrying on the work of the Commission.

Powers as to entering on property.

(4) Every Inspector so appointed may, during any reasonable hour, enter upon, pass over or through any land, buildings or premises for the purpose of carrying out the regulations and orders of the Commission, and perform the duties assigned to him; and every municipal corporation or commission, company, firm, or individual, molesting, hindering, disturbing or interfering with an inspector in the performance of his duty, shall be guilty of an offence, and shall incur the penalty provided by subsection 7.

Duty as to complying with written order of Commission.

(5) Every municipal corporation or commission, and every company, firm or individual, upon receiving notice in writing by the Commission to remedy any defect or to make any alteration, or carry out any work, or comply with such notice within the time thereby prescribed, and in default, shall incur the penalty provided by subsection 7.

(6) Every municipal corporation or commission, and every company, firm or individual, supplying electrical power or energy for use in any electric works, plant, machinery, apparatus, appliance or equipment before the same have been inspected and such supply authorized by the certificate of the Commission, and after notice from the Commission of the unauthorized supply or use, shall incur a penalty of not less than $300 nor more than $500. Penalty for supplying electricity before works approved.

(7) Every municipal corporation or commission, and every company, firm and individual, refusing or neglecting to disconnect or discontinue the supply of electricity to any electric works, plant, machinery, apparatus, appliance, or equipment, upon due notice in writing from the Commission so to do, shall incur a penalty of not less than $300 nor more than $500. Penalty for disobeying order to discontinue supply.

(8) Nothing in this Act shall affect the liability of any municipal corporation or commission, or of any company, firm, or individual, for damages caused to any person or property by reason of any defect in any electric works, plant, machinery, apparatus, appliance, device, material, or equipment, or in the installation or protection thereof, nor shall the Commission or any inspector incur any liability by reason of any inspection or the issue of any certificate or on account of any loss occasioned by the cutting off of the supply of electrical power or energy in accordance with the orders of the Commission. Other liability not affected.

(9) Every municipal corporation or commission, and every company, firm or individual, disobeying the provisions of this Act, or of the regulations, or any order of the Commission, shall incur a penalty of not less than $10 nor more than $50, and in the event of continuing the offence, of not less than $10 nor more than $50 for every day during which such offence continues. Penalty for disobeying regulations.

(10) The penalties imposed by or under the authority of this section shall be recoverable under *The Ontario Summary Convictions Act* and shall be paid over to the Commission. Recovery of penalties under Rev. Stat. c. 90.

**11**. Section 48 of *The Power Commission Act,* as enacted by section 15 of *The Power Commission Act 1915,* is amended by adding thereto the following subsection:— 5 Geo. V. c 19, s. 15, amended.

(4) Every member or officer of a municipal commission who contravenes any of the provisions of this section shall forfeit his office, and shall be disqualified and incapable of being elected or appointed to any such municipal commission or to any other municipal office for a period of two years, and the like Disqualification of member of municipal commission dealing in electrical supplies.

proceedings may be taken by the commission or by a ratepayer against any such member or officer to remove him from his office or declare his disqualification, as may be taken by a ratepayer for the removal or disqualification of a member of a municipal council who has become disqualified from sitting and voting therein, but the Commission shall not be required to furnish security for costs.

Relieving municipality from sinking fund charges.

**12**. Notwithstanding anything in *The Power Commission Act* contained the Commission, with the approval of the Lieutenant-Governor in Council, may relieve any municipal corporation which has entered into a contract with the Commission from the payment of any sum in the sinking fund account during the first five years of such contract, and the amount required from the corporation for sinking fund shall be payable only during the remainder of the term of the contract.

By-laws confirmed.

**13**. By-laws Nos. 716 and 718 of the Corporation of the City of Niagara Falls; By-laws Nos. 486 and 491 of the Corporation of the Town of Blenheim; By-laws Nos. 10 and 11 of 1914, Nos. 7 and 11 of 1915, and No. 3 of 1916, of the Corporation of the Town of Bothwell; By-laws Nos. 576 and 612 of the Corporation of the Town of Chesley; By-laws Nos. 653 and 654 of the Corporation of the Town of Durham; By-laws Nos. P-19 and P-20 of the Corporation of the Town of Gravenhurst; By-laws Nos. 498 and 499 of the Corporation of the Town of Harriston; By-laws Nos. 658 and 659 of the Corporation of the Town of Listowel; By-laws Nos. 265 and 266 of the Corporation of the Town of Markdale; By-laws Nos. 654 and 659 of the Corporation of the Town of Mount Forest; By-laws Nos. 1,169 and 1,178 of the Corporation of the Town of Orangeville; By-laws Nos. 474 and 476 of the Corporation of the Town of Palmerston; By-laws Nos. 1,033 and 1,034 of the Corporation of the Town of Petrolia; By-laws Nos. 602, 603 and 615 of the Corporation of the Town of Ridgetown; By-laws Nos. 207 and 222 of the Corporation of the Village of Ailsa Craig; By-laws Nos. 8 and 9 of 1914, as amended by By-law No. 3 of 1916, and No. 8 of 1915, of the Corporation of the Village of Chatsworth; By-laws Nos. 292 and 294 of the Corporation of the Village of Dutton; By-laws Nos. 254 and 257 of the Corporation of the Village of Dundalk; By-laws Nos. 21 and 14 of the Corporation of the Village of Exeter; By-laws Nos. 29 and 30 of the Corporation of the Village of Flesherton; By-laws Nos. 165 and 166 of the Corporation of the Village of Milverton; By-laws Nos. 318 and 321 of the Corporation of the Village of Shelburne; By-laws Nos. 320, 321 and 327 of the Corporation of the Village of Thamesville; By-laws Nos. 59 and 60 of the Corporation of the Village of Tavistock; By-laws Nos. 83 and 84 of the Corporation of the Village of Victoria Harbor; By-laws Nos. 25, 243 and 259 of the Corporation of the Township of Tilbury West; By-laws Nos. 657 and 658 of the Corporation of the Township of Delaware; By-laws Nos. 304 and 305 of the Corporation of the Township of Egremont; By-laws Nos. 723, 724 and 745 of the Corporation of the Township of Westminster; By-laws Nos. 596 and 597 of the Corporation of the Township of Beverly; By-law No. 592 of the Corporation of the

Township of Ancaster; By-laws Nos. 532 and 542 of the Corporation of the Township of Caradoc; By-laws Nos. 553 and 585 of the Corporation of the Township of South Dumfries; By-law No. 631 of the Corporation of the Township of Tay; By-laws Nos. 811, 849 and 851 of the Corporation of the Township of Toronto are confirmed and declared to be legal, valid and binding upon such corporations and the ratepayers thereof, respectively, and shall not be open to question upon any ground whatsoever, notwithstanding the requirements of *The Power Commission Act,* or the amendments thereto or of any other statute. Rev. Stat. c. 39.

**14**. The Municipal Corporation of the City of Niagara Falls, the Municipal Corporation of the Town of Blenheim, the Municipal Corporation of the Town of Bothwell, the Municipal Corporation of the Town of Harriston, the Municipal Corporation of the Town of Listowel, the Municipal Corporation of the Town of Palmerston, the Municipal Corporation of the Town of Petrolia, the Municipal Corporation of the Town of Ridgetown, the Municipal Corporation of the Village of Ailsa Craig, the Municipal Corporation of the Village of Dutton, the Municipal Corporation of the Village of Exeter, the Municipal Corporation of the Village of Milverton, the Municipal Corporation of the Village of Thamesville, the Municipal Corporation of the Village of Tavistock, the Municipal Corporation of the Police Village of Delaware, the Municipal Corporation of the Police Village of Lambeth, the Municipal Corporation of the Police Village of Lynden, the Municipal Corporation of the Police Village of St. George, the Municipal Corporation of the Township of Toronto are added as parties of the second part to the contract set out in Schedule "A" to *The Power Commission Act 1909,* as varied, confirmed and amended by the said Act, and as further varied, confirmed and amended by the Act passed in the tenth year of the reign of His late Majesty King Edward VII, chaptered 16, and by subsequent Acts and by this Act, and the said contract shall be binding upon the parties thereto, respectively, as to the City of Niagara Falls, from the 15th day of December, 1915; as to the Town of Blenheim, from the 15th day of June, 1915; as to the Town of Bothwell, from the 21st day of June, 1915; as to the Town of Harriston, from the 27th day of August, 1915; as to the Town of Listowel, from the 23rd day of August, 1915; as to the Town of Palmerston, from the 23rd day of August, 1915; as to the Town of Petrolia, from the 11th day of August, 1915; as to the Town of Ridgetown, from the 16th day of June, 1915; as to the Village of Ailsa Craig, from the 5th day of July, 1915; as to the Village of Dutton, from the 29th day of March, 1915; as to the Village of Exeter, from the 5th day of August, 1915; as to the Village of Milverton, from the 30th day of September, 1915; as to the Village of Thamesville, from the 15th day of June, 1915; as to the Village of Tavistock, from the 22nd day of September, 1914; as to the Police Village of Delaware, from the 1st day of April, 1915; as to the Police Village of Lambeth, from the 18th day of February, 1915; as to the Police Village of Lynden, from the 28th day of June, 1915; as to the Police Village of St. George, from the 14th day of June, 1915; as to the Township of Toronto, from the 10th day of June, 1913.

Certain corporations added as parties to contract with Commission.

Time from which contract to be binding on corporations added.

Amendment of schedule to contract.

**15**. The names of the said municipal corporations are added to Schedule "B" of the said contract, and such schedule shall be read as containing the particulars set out in Schedule "A" to this Act.

Certain other contracts confirmed.

**16**. The contracts set out as Schedules "A," "B," "C," "D," "E." "F," "G," "H," "I," "J," "K," "L," and "M" hereto between the Hydro-Electric Power Commission of Ontario and the Corporations of the Town of Chesley, the Town of Durham, the Town of Gravenhurst, the Town of Huntsville, the Town of Markdale, the Town of Mount Forest, the Village of Chatsworth, the Village of Dundalk, the Village of Flesherton, the Village of Shelburne, the Village of Victoria Harbor, the Police Village of Holstein, and the Police Village of Williamsburg are hereby confirmed and declared to be legal, valid and binding upon the parties thereto respectively, and shall not be open to question upon any grounds whatsoever, notwithstanding the requirements of *The Power Commission Act,* or the amendments thereto or any other statute.

Rev. Stat c. 39.

SCHEDULE "A."

| Column 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Name of Municipal Corporation. | Quantity of Power applied for in H.P. | Maximum Price of Power at Niagara Falls. | *No. of Volts. | Estimate maximum cost of power ready for distribution in Municipality. | Estimate proportionate part of costs to construct transmission line, transformer stations and works for nominally 30,000 H.P., with total capacity of 60,000 H.P. | Estimate proportionate part of line loss and of part cost to operate, maintain, repair, renew and insure transmission line, transformer stations and works for nominally 30,000 H.P., with total capacity of 60,000 H.P. |
| | | | | $ c. | $ c. | $ c. |
| Niagara Falls | 2,000 | .... | .... | 11 50 | 17,500 00 | 1,185 00 |
| Blenheim | 250 | .... | .... | 43 70 | 74,901 00 | 4,122 00 |
| Bothwell | 150 | .... | .... | 59 26 | 70,905 00 | 3,427 00 |
| Harriston | 200 | .... | .... | 46 62 | 64,706 00 | 3,440 00 |
| Listowel | 300 | .... | .... | 37 41 | 74,565 00 | 3,927 00 |
| Palmerston | 200 | .... | .... | 40 82 | 55,208 00 | 2,926 00 |
| Petrolia | 500 | .... | .... | 36 26 | 117,295 00 | 6,512 00 |
| Ridgetown | 200 | .... | .... | 47 17 | 65,016 00 | 3,645 00 |
| Ailsa Craig | 100 | .... | .... | 49 67 | 32,784 00 | 2,063 00 |
| Dutton | 50 | .... | .... | 43 53 | 15,130 00 | 849 00 |
| Exeter | 200 | .... | .... | 43 70 | 59,550 00 | 3,247 00 |
| Milverton | 200 | .... | .... | 35 63 | 46,986 00 | 2,446 00 |
| Thamesville | 125 | .... | .... | 45 40 | 38,779 00 | 3,183 10 |
| Tavistock | 100 | .... | .... | 49 50 | 35,173 00 | 2,010 00 |
| Delaware | 25 | .... | .... | 46 56 | 8,704 00 | 434 17 |
| Lambeth | 25 | .... | .... | 46 56 | 8,704 00 | 434 17 |
| Lynden | 120 | .... | .... | 33 00 | 21,714 00 | 1,621 00 |
| St. George | 100 | .... | .... | 38 78 | 24,384 00 | 1,456 00 |
| Toronto Township | 100 | .... | .... | 25 00 | 13,680 00 | 807 00 |

*Number required by each Corporation.

SCHEDULE "B."

This indenture made the 6th day of October, 1915,

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Town of Chesley, hereinafter called the "Corporation," party of the second part.

Whereas the Corporation under the provisions of the *Power Commission Act* and amendments thereto, Revised Statutes of Ontario Chapter 39, has applied to the Commission for a supply of power, and has passed a by-law No. 612, passed the eighteenth day of October, 1915, to authorize the execution of an agreement therefor.

Now therefore this indenture witnesseth, that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and amendments thereto, the parties hereto agree each with the other as follows:—

1. The Commission agrees:

(*a*) To reserve and deliver at the earliest possible date four hundred (400) h.p., or more, of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice, in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous twenty-four (24) hour power every day in the year to the Corporation at the distribution bus bars in the Commission's sub-station within the Corporation's limits.

2. The Corporation agrees:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually in twelve (12) equal monthly instalments interest upon its proportionate part, (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on capital account for the acquiring of properties and rights, and acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

To pay an annual sum for its proportionate part of all moneys expended by the Commission on capital account for the acquiring of the said properties and rights, and the cost of the said construction, so as to form in thirty (30) years a sinking fund for the retirement of securities issued by the Province of Ontario.

Also to bear its proportionate part of the line loss, and pay its proportionate part of the cost to operate, maintain, repair, renew and insure the said generating plants, transformer stations, transmission lines, distributing stations, and other necessary works.

All payments under this clause shall be subject to adjustment under paragraph 6.

(*c*) The amounts payable in accordance with clause 2 (*b*) shall be paid in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bills remain unpaid for fifteen days, the Commission may, in addition to all other remedies, and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes, and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To pay for three-fourths of the power ordered from time to time by the Corporation, and held in reserve for it, as herein provided, whether it takes the same or not. When the highest average amount of power taken for any twenty (20) consecutive minutes during any month exceeds during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or the highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power in accordance with the terms and conditions of this contract.

When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*f*) To use at all times first-class, modern standard commercial apparatus and plant, to be approved by the Commission, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

(*g*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement, and of the said Act.

3. This agreement shall remain in force for thirty (30) years from the date of the first delivery of power under this contract.

4. The power shall be alternating, three-phase, having a periodicity of approximately 60 cycles per second, and shall be delivered as aforesaid at a voltage suitable for local distribution.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Commission, and to take records at all reasonable hours.

6. The Commission shall at least annually, adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations, for such power and such interest, sinking fund, cost of lost power, and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation and other Municipal Corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporations and other Municipal Corporations, supplied by the Commission, having regard to the amounts paid by them respectively, under the terms of this agreement, and such other considerations as may appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

8. If at any time any other Municipal Corporation, or pursuant to said Act, any railway or distributing company, or any other corporation, or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation, in writing, of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants, as to the price to be paid for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application without the written consent of such corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable for payment for any portion of the power supplied. No power

shall be supplied by the municipal corporation to any railway or distributing company without the written consent of the Commission, but the Corporation may sell power to any person or manufacturing companies within the limits of the Corporation, but such power shall not be sold for less than cost, neither shall there be any discrimination as regards price and quantity.

9. If differences arise between corporations to which the Commission is supplying power, the Commission may, upon application, fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a commissioner appointed under the *Act respecting Enquiries concerning Public Matters.*

10. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof, the Commission and the Corporation have, respectively, affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*

W. W. Pope, *Secretary.*

MUNICIPAL CORPORATION OF THE TOWN OF CHESLEY.

C. J. Halliday, *Mayor.*

H. S. Sanderson, *Clerk.*

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SCHEDULE "C."

This indenture made in duplicate the day of in the year of our Lord,

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Town of Durham hereinafter called the "Corporation," party of the second part.

Whereas, pursuant to an Act to provide for the transmission of electrical power to municipalities known as the *Power Commission Act* and amendments thereto, the Corporation applied to the Commission for supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the

Corporation (and the electors of the Corporation assented to the by-laws authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and amendments thereto, the Commission agrees with the Corporation.

(*a*) To reserve and deliver at the earliest possible date 100 h.p. or more of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice in writing which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for.

(*c*) To use at all times first-class, modern, standard, commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuously 24-hour power every day in the year to the Corporation at the distribution bus bars in the Commission's substation within the Corporation's limits.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission.

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually, interest at rate payable by the Commission upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on capital account for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

Also to pay an annual sinking fund instalment of such amount as to form at the end of 30 years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based as aforesaid, of all moneys advanced by the Province of Ontario, for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other work necessary for the delivery of said electrical energy or power, delivered to the Corporation under the terms of this contract. Also to pay the Corporation's proportionate part, based as aforesaid, of the cost of lost power and of the cost of operating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations and other necessary work. Subject to adjustment under Clause 6 of this agreement.

(*c*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate;

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement, and of the said Act.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes the same or not. When the highest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or the highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90 per cent. the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard commercial apparatus and plant, to be approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

3. This agreement shall remain in force for thirty years from date of the first delivery of power under this contract.

4. The power shall be alternating, three phase, having a periodicity of approximately 60 cycles per second and shall be delivered as aforesaid at a voltage suitable for local distribution.

(*a*) That the meters with their series and potential transformers shall be connected at the point of delivery.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the substation in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder, and when voltage and frequency are so maintained, the amount of power, its fluctuations, load factor, power factor, distribution as to phases and all other electric characteristics and qualities, are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations for such power and such interest, sinking fund, cost of lost power and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

If at any time any other Municipal Corporation, or pursuant to said Act, any railway or distributing company, or any other Corporations or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the involved Corporation or Corporations in writing, of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a Municipal Corporation shall be computed as part of the quantity supplied to such Corporation, but such Corporation shall not be liable for payment for any portion of the power so supplied. No power shall be supplied by the Municipal Corporation to any railway or distributing company without the written consent of the Commission. Power shall not be sold for less than the cost and there shall be no discrimination as regards price and quantity.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation or Corporations supplied by the Commission but the Commission shall be entitled to a lien upon said property for all moneys expended by the Com-

mission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any) supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other consideration as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

8. If differences arise between Corporations to which the Commission is supplying power, the Commission may upon application fix a time and place and hear all representations that may be made by the parties and the Commission, shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under the *Act respecting Enquiries concerning Public Matters.*

9. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

(Seal.)

MUNICIPAL CORPORATION OF THE TOWN OF DURHAM.

A. S. Hunter, *Mayor.*
Wm. B. Vollet, *Clerk.*

(Seal.)

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SCHEDULE "D."

This indenture made in duplicate the Twenty-fifth day of October, in the year of our Lord, One Thousand Nine Hundred and Fifteen.

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called "The Commission," party of the first part;

and

The Municipal Corporation of the Town of Gravenhurst, hereinafter called "The Corporation," party of the second part.

Whereas pursuant to an Act to provide for the transmission of electric power to municipalities, known as *The Power Commission Act*, and amendments thereto, the Corporation applied to the Commission for a supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the

Corporation (and the electors of the Corporation assented to the by-laws authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreements of the Corporation herein set forth, subject to the provisions of the said Act and amendments hereto, the Commission agrees with the Corporation:

(*a*) To reserve and deliver at the earliest possible date 300 h.p., or more, of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation when called for any additional electrical power then available.

(*c*) To use at all times first-class, modern, standard, commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous 24-hour power every day in the year to the Corporation at the outgoing line bracket on the Commission's generating station at South Falls on the south branch of the Muskoka River.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually to the Commission the Corporation's proportionate part of interest and sinking fund (based on the quantity of electrical energy or power taken) on all moneys expended by the Commission on capital account for the acquiring of properties and rights and acquiring and construction of generating plant and other works necessary for the delivery of said electrical power or energy to the Corporation under the terms of this agreement.

Also to pay annually to the Commission the Corporation's proportionate part (based as above) of the cost of lost power and operating, maintaining, repairing, renewing and insuring the generating plant and other necessary works.

(*c*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice discontinue the supply of power to the Corporation until the said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Acts.

(*e*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes the same or not. When the greatest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, for twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve such increased quantity of power in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the greatest amount of power taken for said twenty consecutive minutes falls below 90%, the Corporation shall pay for 90% of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard, commercial apparatus and plant approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and the Corporation.

3. This agreement shall remain in force for 16 years from the date of the first delivery of power under this contract.

4. The power shall be alternating, three-phase, having a periodicity of approximately 60 cycles per second, and shall be delivered as aforesaid at approximately 6,600 volts.

(*a*) The metres, with their series and potential transformers, shall be connected at the point of delivery as near as practicable.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the generating station at South Falls on the Muskoka River shall constitute the supply of all power involved herein, and the fulfilment of all operating obligations hereunder, and when the voltage and frequency are so maintained, the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electrical characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any person or persons appointed for this purpose by the Commission, shall have

the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations for such power and such interest, sinking fund, cost of lost power, and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

If at any time any other municipal corporation, or, pursuant to said Act, any railway or distributing company, or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and involved corporation or corporations in writing of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of said Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of said Municipal Corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant other than a Municipal Corporation shall be computed as a part of the quantity supplied to such Corporation, but such Corporation shall not be liable for payment for any portion of the power so supplied. No power shall be supplied by the Municipal Corporation to any railway or distributing company without the written consent of the Commission. Power shall not be sold for less than the cost, and there shall be no discrimination as regards price and quantity.

7. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any) supplied by the Commission.

8. If differences arise between Corporations to which the Commission is supplying power, the Commission may, upon application, fix a time and place and hear all representations that may be made by the parties, and the Commission shall in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under *The Act Respecting Inquiries Concerning Public Matters.*

9. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the "Commission" and the "Corporation" have respectively affixed their corporate seals and the hand of their proper officers.

Signed, sealed and delivered this twenty-fifth day of October, 1915, A.D., in the presence of

HYDRO-ELECTRIC POWER COMMISSION.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

(Seal)

MUNICIPAL CORPORATION OF THE TOWN OF GRAVENHURST.

Archy. Sloan, *Mayor.*
W. H. Butterworth, *Town Clerk.*

(Seal)

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SCHEDULE "E."

This Indenture, made in Duplicate the 10th day of March, in the year of our Lord one thousand nine hundred and fifteen (1915).

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called "The Commission," party of the first part;

and

The Municipal Corporation of the Town of Huntsville, hereinafter called "The Corporation," party of the second part.

Whereas pursuant to an Act to provide for the transmission of electric power to municipalities known as *The Power Commission Act* and amendments thereto, the Corporation applied to the Commission for a supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the Corporation (and the electors of the Corporation assented to the By-laws, authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and amendments thereto, the Commission agrees with the Corporation:

(*a*) To reserve and deliver at the earliest possible date 800 h.p. or more of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electrical power when called for.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous twenty-four-hour power every day in the year to the Corporation at the distribution bus bars in the Commission's substation within the Corporation's limits.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver the same.

(*b*) To pay annually interest at 4% to 4½% per annum upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on capital account for the acquiring of properties and rights, and acquiring the construction of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of the said electrical power or energy to the Corporation under the terms of this contract.

Also to pay an annual sinking fund instalment of such amount as to form at the end of sixteen years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based as aforesaid, of all moneys advanced by the Province of Ontario for the acquiring of the properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations, and other work necessary for the delivery of electrical energy or power, delivered to the Corporation under the terms of this contract. Also to pay the Corporation's proportionate part, based as aforesaid, on the cost of lost power, and the cost of operating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations, and other necessary works.

(*c*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until the said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement, and of the said Act.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided, whether it takes the same or not. When the highest amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for it for twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve such increased quantity of power in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the highest amount of power taken for said twenty consecutive minutes falls below 90% the Corporation shall pay for 90% of said power divided by the power factor.

(*i*) To use at all times first-class modern, standard, commercial apparatus and plant approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and the Corporation.

3. This agreement shall remain in force sixteen years from the date of the first delivery of power under this contract.

4. The power shall be alternating, three phase, having a periodicity of approximately sixty cycles per second, and shall be delivered as aforesaid at a voltage suitable for local distribution.

(*a*) That the meters with their series and potential transformers shall be connected at the point of delivery.

(*b*) That the maintenance by the Commission of approximately the agreed voltage, at approximately the agreed frequency at the substation in the limits of the Corporation shall constitute the supply of all power involved herein, and the fulfilment of all operating obligations hereunder, and when the voltage and frequency are so maintained, the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electrical characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any person or persons appointed for this purpose by the Commission shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant, property of the Corporation and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the municipal corporation or corporations for such power and such interest, sinking fund, cost of lost power, and cost of generating, operating, maintaining, repairing, renewing, and insuring said works.

If at any time any other municipal corporation, or pursuant to said Act, any railway or distributing company, or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and involved corporation or corporations in writing of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of said Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of said municipal corporation taking power from the Commission at the time of such application without the written consent of such corporation.

In determining the quantity of power supplied to a municipal corporation the quantity supplied by the Commission within the limits of the corporation to any applicant other than a municipal corporation shall be computed as a part of the quantity supplied to such corporation, but such corporation shall not be liable for payment for any portion of the power so supplied. No power shall be supplied by the municipal corporation to any railway or distributing company without the written consent of the Commission. Power shall not be sold for less than the cost, and there shall be no discrimination as regards price and quantity.

7. It is hereby declared the Commission is to be a trustee of all property held by the Commission under this agreement for the corporation or corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any) supplied by the Commission, taking regard to the amounts paid by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

8. If differences arise between corporations to which the Commission is supplying power, the Commission may, upon application, fix a time and place, and hear all representations that may be made by the parties, and the Commission shall in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under *The Act respecting Enquiries Concerning Public Matters.*

9. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the "Commission" and the "Corporation" have respectively affixed their corporate seals and the hand of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

(Seal )

MUNICIPALITY OF THE TOWN OF HUNTSVILLE.

H. E. Rise, *Mayor.*
J. M. Cullon, *Clerk.*

(Seal.)

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SCHEDULE "F."

This Indenture, made the 11th day of September, 1915.

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Town of Markdale, hereinafter called the "Corporation," party of the second part.

Whereas the Corporation, under the provisions of *The Power Commission Act* and amendments thereto, Revised Statutes of Ontario, Chapter 39, has applied to the Commission for a supply of power and has passed a By-law No. 265, passed the 30th day of July, 1915, to authorize the execution of an agreement therefor.

Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and amendments thereto, the parties hereto agree each with the other as follows:

1. The Commission agrees:

(*a*) To reserve and deliver at the earliest possible date one hundred and fifty (150) horse power, or more, of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice, in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous twenty-four (24) hour power every day in the year to the Corporation at the distribution bus bars in the Commission's substation within the Corporation's limits.

2. The Corporation agrees:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually in twelve (12) equal monthly instalments, interest upon its proportionate part (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on capital account for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

To pay an annual sum for its proportionate part of all moneys expended by the Commission on capital account for the acquiring of the said properties and rights, and the cost of the said construction, so as to form in thirty (30) years a sinking fund for the retirement of securities issued by the Province of Ontario.

Also to bear its proportionate part of the line loss and pay its proportionate part of the cost to operate, maintain, repair, renew, and insure the said generating plants, transformer stations, transmission lines, distributing stations, and other necessary works.

All payments under this clause shall be subject to adjustment under paragraph 6.

(*c*) The amounts payable in accordance with clause 2 (*b*) shall be paid in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bills remain unpaid for fifteen days the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided, whether it takes the same or not. When the highest average amount of power taken for any twenty consecutive minutes during any month exceeds during the twenty consecutive minutes three-fourths of the amount ordered by the

Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or the highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power in accordance with the terms and conditions of this contract.

When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*f*) To use at all times first-class, modern, standard commercial apparatus and plant, to be approved by the Commission, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

(*g*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement, and of the said Act.

3. This agreement shall remain in force for thirty (30) years from the date of the first delivery of power under this contract.

4. The power shall be alternating, three-phase, having a periodicity of approximately 60 cycles per second, and shall be delivered as aforesaid at a voltage suitable for local distribution.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time, during the continuance of this agreement, to inspect the apparatus, plant, and property of the Corporation, and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations for such power and such interest, sinking fund, cost of lost power and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporations and other municipal corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporations and other municipal corporations, supplied by the Commission, having regard to the amounts paid by them, respectively, under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

8. If at any time any other municipal corporation, or pursuant to said Act, any railway or distributing company, or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation, in writing, of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works, or any part thereof, are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application, without the written consent of such Corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such Corporation, but such Corporation shall not be liable for payment for any portion of the power so supplied. No power shall be supplied by the municipal corporation to any railway or distributing company, without the written consent of the Commission, but the Corporation may sell power to any person or persons, or manufacturing companies within the limits of the Corporation, but such power shall not be sold for less than cost; neither shall there be any discrimination as regards price and quantity.

9. If differences arise between corporations to which the Commission is supplying power, the Commission may, upon application, fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a commissioner appointed under the *Act respecting Enquiries concerning Public Matters.*

10. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof, the Commission and the Corporation have respectively affixed their Corporate Seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman,*
W. W. Pope, *Secretary.*

(Seal.)

MUNICIPAL CORPORATION OF THE TOWN OF MARKDALE.

R. W. Emier, *Reeve.*
R. Gilfillan, *Clerk.*

(Seal.)

SCHEDULE "G."

This Indenture made in duplicate the 15th day of March, in the year of our Lord, 1915.

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Town of Mount Forest, hereinafter called the "Corporation," party of the second part.

Whereas, pursuant to an Act to provide for the transmission of electrical power to municipalities known as the *Power Commission Act* and amendments thereto, the Corporation applied to the Commission for a supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the Corporation (and the electors of the Corporation assented to the by-laws authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and amendments thereto, the Commission agrees with the Corporation:

(*a*) To reserve and deliver at the earliest possible date 400 h.p. or more of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice in writing which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous 24-hour power every day of the year to the Corporation at the distribution bus bars in the Commission's sub-station within the Corporation's limits.

2. In consideration of the premises and of the agreement herein set forth, the Corporation agrees with the Commission:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement, so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually, interest at rate payable by the Commission upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on

capital account for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

Also to pay an annual sinking fund instalment of such amount as to form at the end of 30 years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based as aforesaid, of all moneys advanced by the Province of Ontario for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other work necessary for the delivery of said electrical energy or power, delivered to the Corporation under the terms of this contract. Also to pay the Corporation's proportionate part, based as aforesaid, of the cost of lost power and of the cost of operating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations and other necessary works. Subject to adjustment under Clause 6 of this agreement.

(*c*) The amount payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement, and of the said Act.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for its as herein provided, whether it takes the same or not. When the highest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or the highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard commercial apparatus and plant, to be approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

3. This agreement shall remain in force for thirty years from date of the first delivery of power under this contract.

4. The power shall be alternating, three-phase, having a periodicity of approximately 60 cycles per second and shall be delivered as aforesaid at a voltage suitable for local distribution.

(*a*) That the meters, with their series and potential transformers, shall be connected at the point of delivery.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder, and when voltage and frequency are so maintained, the amount of power, its fluctuations, load factor, power factor, distribution as to phases and all other electric characteristics and qualities, are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement, to inspect the apparatus, plant and property of the Corporation, and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations for such power and such interest, sinking fund, cost of lost power and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

If at any time any other Municipal Corporation, or pursuant to said Act, any railway or distributing company, or any other Corporations or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the involved Corporation or Corporations, in writing, of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions, as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application, without the written consent of such corporation.

In determining the quantity of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a Municipal Corporation, shall be computed as part of the quantity supplied to such Corporation, but such Corporation shall not be liable for payment for any portion of the power so supplied. No power shall be supplied by the Municipal Corporation to any railway or distributing company, without the written consent of the Commission. Power shall not be sold for less than the cost, and there shall be no discrimination as regards price and quantity.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation or Corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any), supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

8. If differences arise between Corporations to which the Commission is supplying power, the Commission may upon application fix a time and place, and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under the *Act respecting Enquiries Concerning Public Matters.*

9. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman,*
W. W. Pope, *Secretary.*
(Seal.)

MUNICIPAL CORPORATION OF THE TOWN OF MARKDALE.

T. Clark, *Mayor.*
W. C. Perry, *Clerk.*
(Seal.)

SCHEDULE "H."

This Indenture made in duplicate the day of in the year of our Lord,

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Village of Chatsworth, hereinafter called the "Corporation," party of the second part.

Whereas, pursuant to an Act to provide for the transmission of electrical power to municipalities known as *The Power Commission Act* and amendments thereto, the Corporation applied to the Commission for a supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the Corporation (and the electors of the Corporation assented to the by-laws authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and amendments thereto, the Commission agrees with the Corporation:

(*a*) To reserve and deliver at the earliest possible date 75 h.p. or more of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice in writing which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous 24-hour power every day in the year to the Corporation at the distribution bus bars in the Commission's sub-station within the Corporation's limits.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement, so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually interest at rate payable by the Commission upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on

capital account for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

Also to pay an annual sinking fund instalment of such amount as to form at the end of 30 years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based as aforesaid, of all moneys advanced by the Province of Ontario for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations, and other work necessary for the delivery of said electrical energy or power delivered to the Corporation under the terms of this contract. Also to pay the Corporation's proportionate part, based as aforesaid, of the cost of lost power and of the cost of operating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations and other necessary works. Subject to adjustment under clause 6 of this agreement.

(*c*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies, and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided, whether it takes the same or not. When the highest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power, in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard commercial apparatus and plant, to be approved by the Commission.

(*j*) To exercise all due skill and diligence, so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

3. This agreement shall remain in force for thirty years from date of the first delivery of power under this contract.

4. The power shall be alternating, three-phase, having a periodicity of approximately 60 cycles per second, and shall be delivered as aforesaid at a voltage suitable for local distribution.

(*a*) That the meters, with their series and potential transformers, shall be connected at the point of delivery.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder, and when voltage and frequency are so maintained, the amount of power, its fluctuations, load factor, power factor, distribution as to phases and all other electric characteristics and qualities, are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations for such power, and such interest, sinking fund, cost of lost power and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

If at any time any other Municipal Corporation, or, pursuant to said Act, any railway or distributing company, or any other Corporations or person applies to the Commission for a supply of power, the Commission shall notify the applicant and the involved Corporation or Corporations in writing of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred and paid and to be paid by the Corporation, appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works, or any part thereof, are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application, without the written consent of such Corporation.

In determining the quantity of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a Municipal Corporation, shall be computed as part of the quantity supplied to such Corporation, but such Corporation shall not be liable for payment for any portion of the power so supplied. No power shall be supplied by the Municipal Corporation to any railway or distributing company without the written consent of the Commission. Power shall not be sold for less than the cost, and there shall be no discrimination as regards price and quantity.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation or Corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any) supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

8. If differences arise between Corporations to which the Commission is supplying power, the Commission may, upon application, fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under *The Act Respecting Enquiries Concerning Public Matters.*

9. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

J. B. Lucas, *Vice-Chairman.*
W. W. Pope, *Secretary.*

(Seal)

THE CORPORATION OF THE VILLAGE OF CHATSWORTH.

Wm. Breese, *Reeve.*
W. G. Reilly, *Clerk.*

(Seal)

SCHEDULE "I."

This Indenture made in duplicate the 1st day of March in the year of our Lord, 1915,

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Village of Dundalk, hereinafter called the "Corporation," party of the second part.

Whereas, pursuant to an Act to provide for the transmission of electrical power to municipalities, known as the *Power Commission Act* and amendments thereto, the Corporation applied to the Commission for a supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the Corporation (and the electors of the Corporation assented to the by-laws authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and Amendments thereto, the Commission agrees with the Corporation:

(*a*) To reserve and deliver at the earliest possible date 200 h.p. or more of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for.

(*c*) To use at all times first-class, modern, standard, commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous 24-hour power every day in the year to the Corporation at the distribution bus bars in the Commission's sub-station within the Corporation's limits.

2. In consideration of the premises and of the agreements herein set forth the Corporation agrees with the Commission:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually, interest at rate payable by the Commission upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on capital account for the acquiring of properties and rights, the acquiring and

construction of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract;

Also to pay an annual sinking fund instalment of such amount as to form at the end of 30 years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based as aforesaid, of all moneys advanced by the Province of Ontario for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other work necessary for the delivery of said electrical energy or power, delivered to the Corporation under the terms of this contract. Also to pay the Corporation's proportionate part, based as aforesaid, of the cost of lost power and of the cost of operating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations and other necessary works. Subject to adjustment under clause 6 of this agreement.

(*c*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes the same or not. When the highest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month;

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or the highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard commercial apparatus and plant, to be approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

3. This agreement shall remain in force for thirty years from date of the first delivery of power under this contract.

4. The power shall be alternating, three-phase, having a periodicity of approximately 60 cycles per second and shall be delivered as aforesaid at a voltage suitable for local distribution.

(*a*) That the meters with their series and potential transformers shall be connected at the point of delivery.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder. and when voltage and frequency are so maintained, the amount of power, its fluctuations, load factor, power factor, distribution as to phases and all other electric characteristics and qualities, are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant, and property of the Corporation and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or corporations for such power and such interest, sinking fund, cost of lost power and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

If at any time any other municipal corporation, or pursuant to said Act, any railway or distributing company, or any other corporations or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the involved Corporation or corporations in writing of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application without the written consent of such corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable for payment for any portion of the power supplied. No power shall be supplied by the municipal corporation to any railway or distributing company without the written consent of the Commission. Power shall not be sold for less than the cost, and there shall be no discrimination as regards price and quantity.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation or corporations supplied by the Commission, but the Commission shall be entitled to a lien upon the said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any) supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

8. If differences arise between corporations to which the Commission is supplying power, the Commission may upon application fix a time and place and hear all representations that may be made by the parties and the Commission shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a commissioner appointed under the *Act respecting Enquiries concerning Public Matters.*

9. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

(Seal)

THE MUNICIPAL CORPORATION OF THE VILLAGE OF DUNDALK.

John Sinclair, *Reeve.*
M. N. Rinley, *Clerk.*

(Seal)

SCHEDULE "J."

This Indenture made in duplicate the day of , in the year of our Lord

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Village of Flesherton, hereinafter called the "Corporation," party of the second part.

Whereas, pursuant to an Act to provide for the transmission of electrical power to municipalities, known as *The Power Commission Act* and amendments thereto, the Corporation applied to the Commission for a supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the Corporation (and the electors of the Corporation assented to the by-laws authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and amendments thereto, the Commission agrees with the Corporation:

(*a*) To reserve and deliver at the earliest possible date 75 h.p. or more of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice in writing which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous twenty-four hour power every day in the year to the Corporation at the distribution bus bars in the Commission's sub-station within the Corporation's limits.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:—

(*a*) To use all diligence by every lawful means within its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver the same.

(*b*) To pay annually interest at rate payable by the Commission upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken), of all moneys expended by the Commission on

capital account for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

Also to pay an annual sinking fund instalment of such amount as to form at the end of thirty years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based as aforesaid, of all moneys advanced by the Province of Ontario for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other work necessary for the delivery of said electrical energy or power delivered to the Corporation under the terms of this contract. Also to pay the Corporation's proportionate part, based as aforesaid, of the cost of lost power and of the cost of operating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations and other necessary works. Subject to adjustment under Clause 6 of this agreement.

(c) The amounts payable under this contract shall be paid in twelve monthly instalments, in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes the same or not. When the highest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month;

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or the highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the highest average amount of power

taken for said twenty consecutive minutes falls below 90%, the Corporation shall pay for 90% of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard commercial apparatus and plant, to be approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

3. This agreement shall remain in force for thirty years from date of the first delivery of power under this contract.

4. The power shall be alternating, three phase, having a periodicity of approximately sixty cycles per second and shall be delivered as aforesaid at a voltage suitable for local distribution.

(*a*) That the meters with their series and potential transformers shall be connected at the point of delivery.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder, and when voltage and frequency are so maintained, the amount of power, its fluctuations, load factor, power factor, distribution as to phases and all other electric characteristics and qualities, are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the municipal corporation or corporations for such power and such interest, sinking fund, cost of lost power and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

If at any time any other municipal corporation, or pursuant to said Act, any railway or distributing company, or any other corporations or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the involved corporation or corporations in writing, of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of the Corporation

will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant other than a municipal corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable for payment for any portion of the power so supplied. No power shall be supplied by the municipal corporation to any railway or distributing company without the written consent of the Commission. Power shall not be sold for less than the cost and there shall be no discrimination as regards price and quantity.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the corporation or corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any) supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other consideration as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

8. If differences arise between Corporations to which the Commission is supplying power, the Commission may upon application fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a commissioner appointed under *The Act respecting Enquiries Concerning Public Matters.*

9. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

MUNICIPAL CORPORATION OF THE VILLAGE OF FLESHERTON.

D. McTavish, *Reeve.*
W. J. Bellamy, *Village Clerk.*

SCHEDULE "K."

This Indenture made in duplicate the day of , in the year of our Lord,

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part,

and

The Municipal Corporation of the Village of Shelburne, hereinafter called the "Corporation," party of the second part.

Whereas, pursuant to an Act to provide for the transmission of electrical power to municipalities known as the *Power Commission Act*, and amendments thereto, the Corporation applied to the Commission for a supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the Corporation (and the electors of the Corporation assented to the by-laws authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and Amendments thereto, the Commission agrees with the Corporation:

(*a*) To reserve and deliver at the earliest possible date 300 h.p. or more of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice in writing which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous 24-hour power every day in the year to the Corporation at the distribution bus bars in the Commission's sub-station within the Corporation's limits.

2. In consideration of the premises and of the agreement herein set forth, the Corporation agrees with the Commission:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement, so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually, interest at rate payable by the Commission upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on capital account for the acquiring of properties and rights, the acquiring

and construction of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

Also to pay an annual sinking fund instalment of such amount as to form at the end of 30 years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based, as aforesaid, on all moneys advanced by the Province of Ontario, for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other work necessary for the delivery of said electrical energy or power, delivered to the Corporation under the terms of this contract. Also to pay the Corporation's proportionate part, based as aforesaid, of the cost of lost power, and the cost of operating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations and other necessary works. Subject to adjustment under Clause 6 of this agreement.

(*c*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement, and of the said Act.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided, whether it takes the same or not. When the highest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve such increased quantity of power, in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard commercial apparatus and plant, to be approved by the Commission.

(*j*) To exercise all due skill and diligence, so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

3. This agreement shall remain in force for thirty years from date of the first delivery of power under this contract.

4. The power shall be alternating, three-phase, having a periodicity of approximately 60 cycles per second, and shall be delivered as aforesaid at a voltage suitable for local distribution.

(*a*) That the meters, with their series and potential transformers, shall be connected at the point of delivery.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder, and when voltage and frequency are so maintained the amount of power, its fluctuations, load factor, power factor, distribution as to phases and all other electric characteristics and qualities, are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commision, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation, and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations for such power and such interest, sinking fund, cost of lost power and cost of generating, operating, maintaining, repairing, renewing and insuring said works.

If at any time any other Municipal Corporation, or pursuant to said Act, any railway or distributing company, or any other Corporations or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the involved Corporation or Corporations in writing, of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works or any part thereof are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application, without the written consent of such Corporation.

In determining the quantity of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a Municipal Corporation, shall be computed as part of the quantity supplied to such Corporation, but such Corporation shall not be liable for payment for any portion of the power so supplied. No power shall be supplied by the Municipal Corporation to any railway or distributing company without the written consent of the Commission. Power shall not be sold for less than the cost and there shall be no discrimination as regards price and quantity.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation or Corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other (if any), supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

8. If differences arise between Corporations to which Commission is supplying power, the Commission may, upon application, fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner under the *Act respecting Enquiries concerning Public Matters.*

9. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

MUNICIPAL CORPORATION OF THE VILLAGE OF SHELBURNE.

Hugh Falconer, *Reeve.*

Witness:
Thos. Whalley, *Clerk.*

SCHEDULE "L."

This Indenture made (in duplicate) the twenty-sixth day of August, in the year of our Lord one thousand nine hundred and fifteen.

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Village of Victoria Harbour, hereinafter called the "Corporation," party of the second part.

Whereas, pursuant to *An Act to provide for transmission of Electrical Power to Municipalities*, the Corporation applied to the Commission for a supply of power, and the electors of the Corporation assented to a by-law authorizing the Corporation to enter into a contract with the Commission for such power.

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreements of the Corporation herein set forth, subject to the provisions of said Act and of the said contract, the Commission agrees with the Corporation:

(*a*) To reserve and deliver at the earliest possible date 50 h.p. or more of electric power to the Corporation.

(*b*) At the expiration of thirty days' notice in writing which may be given by the Corporation from time to time, during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for in blocks of 25 h.p. each up to the limit of the capacity of the Big Chute's Power Development.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence, so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) The power shall be delivered to the Corporation at approximately 2,200 volts and at approximately sixty cycles per second.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) Subject to the provisions of paragraph 2 (*f*) hereof, to pay the Commission sixteen dollars and fifty cents ($16.50) per h.p. per annum for all power taken by the Corporation at the interswitching structure located on the Commission's transmission lines at the Village of Waubaushene.

Nothing herein contained shall bind the Commission to supply power on the demand of the Corporation after the capacity of the Big Chute's plant

has been reached, unless the Commission has power available or capable of development.

(*c*) To pay in addition annually, interest (at the same rate as paid by the Commission) upon the moneys expended by the Commission on capital account for the construction of transmission lines, the transformer station and equipment, and all other necessary works required for the delivery of power and transforming it from 22,000 to 2,200 volts.

Also to pay an annual part of the cost of the construction of said line, station and works so as to form in thirty years a sinking fund for the repayment of the moneys advanced by the Province of Ontario, in connection with this work.

Also to pay the Corporation's proportionate part of the cost of lost power, of operating, maintaining, repairing, renewing and insuring the said line, station and works.

(*d*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the office of the Commission at Toronto, and bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*e*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided, whether it takes the same or not. When the greatest average amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it for twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve an additional block of power in accordance with the terms and conditions of this contract.

When the power factor of the greatest amount of power taken for said twenty consecutive minutes falls below 90%, the Corporation shall pay for 90% of said power divided by the power factor.

(*g*) To use at all times first-class, modern, standard commercial apparatus and plant, approved by the Commission.

(*h*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and the Corporation.

3. This agreement shall remain in force until the date of expiration of the lease to the water rights on the Severn River of the Big Chute development, that is to say, until the tenth (10th) day of September in the year nineteen hundred and twenty-nine; providing the said lease is renewed by the Commission, then this agreement shall remain in force for thirty (30) years from the date of the first delivery of power thereunder.

4. The power shall be approximately 2,200 volts, 60 cycle, 3 phase, alternating commercially continuous twenty-four hour power every day in the year except as provided herewith, and shall be delivered by the Commission to the Corporation at the 2,200 volt terminals of the step-down transformers in the substation in the Corporation limits.

(*a*) That the meters with their series or potential transformers may be connected to the high tension side or low tension side of the transformers, or some connected to one side and some connected to the other, as the Commission may elect. That whenever connected at other than the point of measurement, their reading shall be subject to a correction and shall be corrected to give a reading such as would be obtained by instruments as if connected at the point of measurement. That such corrections shall be based upon tests made upon the step-down transformers and transmission lines by the Commission, or any other tests upon them acceptable to the Commission as to the efficiency, regulation, or any other constants of the transformers and transmission lines necessary for said correction, but that such tests, when made by the Commission, are to be made in the presence of the representatives or representative of the customer if it so desires.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the substation in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating obligations hereunder; and when voltage and frequency are so maintained, the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. In case the Commission should at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking said power, or any part thereof, by strike, lock-out, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond their control, then the Commission shall not be bound to deliver such power during such times, and the Corporation shall not be bound to pay the price of said power during such time, but as soon as the cause of such interruption is removed, the Commission shall without any delay supply said power as aforesaid, and the Corporation shall take the same and shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If at any time any other municipal corporation, or pursuant to said Act, any railway or distributing company, or any other corporation or person,

applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation in writing, of a time and place, and hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantity of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application without the written consent of such corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant other than a municipal corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable to pay for the power so supplied, or otherwise in respect thereof. In order to prevent discrimination by the municipal corporation, no power shall be supplied by the municipal corporation to any railway or distributing company or person outside the corporation without the written consent of the Commission, but the Corporation may sell power to any person or persons or manufacturing companies inside the limits of the corporation, but such power shall not be sold for less than the cost and without discrimination as regards price and quantity.

8. If differences arise between corporations to whom the Commission is supplying power, the Commission may upon application fix a time and place to hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the power that may be conferred upon a commissioner appointed under *The Act respecting Enquiries Concerning Public Matters.*

9. If differences arise between the Corporation and the Commission, the Lieutenant-Governor in Council may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Lieutenant-Governor in Council shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Lieutenant-Governor in Council shall have all the powers that may be conferred upon a commission appointed under *The Act respecting Enquiries Concerning Public Matters.*

10. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

THE MUNICIPAL CORPORATION OF THE VILLAGE OF VICTORIA HARBOUR.

Jerome Duckworth, *Reeve.*
E. B. Browne, *Clerk.*

(Seal.)

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SCHEDULE "M."

This indenture made this eleventh day of October, one thousand nine hundred and fifteen.

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the Police Village of Holstein, hereinafter called the "Corporation," party of the second part.

Whereas the Corporation under the provisions of the *Power Commission Act* and amendments thereto, Revised Statutes of Ontario, Chapter 39 has applied to the Commission for a supply of power, and has passed a by-law No. 304, passed the 10th day of August, 1915, to authorize the execution of an agreement therefor.

Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth, subject to the provisions of the said Act and amendments thereto, the parties hereto agree each with the other as follows:

1. The Commission agrees:

(*a*) To reserve and deliver at the earliest possible date fifty (50) h.p., or more, of electrical power to the Corporation.

(*b*) At the expiration of reasonable notice, in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for;

(*c*) To use at all times first-class modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) To deliver commercially continuous twenty-four (24) hour power every day in the year to the Corporation at the distribution bus bars in the Commission's sub-station within the Corporation's limits.

2. The Corporation agrees:

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually in twelve (12) equal monthly instalments, interest upon its proportionate part (based on the quantity of electrical energy or power taken) of all moneys expended by the Commission on capital account for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

To pay an annual sum for its proportionate part of all moneys expended by the Commission on capital account for the acquiring of the said properties and rights, and the cost of the said construction, so as to form in thirty (30) years a sinking fund for the retirement of securities issued by the Province of Ontario.

Also to bear its proportionate part of the line loss, and pay its proportionate part of the cost to operate, maintain, repair, renew, and insure the said generating plants, transformer stations, transmission lines, distributing stations, and other necessary works.

All payments under this clause shall be subject to adjustment under paragraph 6.

(*c*) The amounts payable in accordance with clause 2 (*b*) shall be paid in gold coin of the present standard of weight and fineness, at the offices of the Commission at Toronto. Bills shall be rendered by the Commission on or before the 5th day, and paid by the Corporation on or before the 15th day of each month. If any bills remain unpaid for fifteen days, the Commission may, in addition to all other remedies, and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electrical power exclusively from the Commission during the continuance of this agreement.

(*e*) To pay for three-fourths of the power ordered from time to time by the Corporation, and held in reserve for it, as herein provided; whether it takes the same or not. When the highest average amount of power taken for any twenty (20) consecutive minutes during any month exceeds during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it, as determined by an integrated peak, or

the highest average, for a period of twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, such increased quantity of power in accordance with the terms and conditions of this contract.

When the power factor of the highest average amount of power taken for said twenty consecutive minutes falls below 90 per cent. the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*f*) To use at all times first-class, modern standard commercial apparatus and plant, to be approved by the Commission, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and of the Corporation.

(*g*) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement, and of the said Act.

3. This agreement shall remain in force for thirty (30) years from the date of the first delivery of power under this contract.

4. The power shall be alternating, three-phase, having a periodicity of approximately 60 cycles per second, and shall be delivered as aforesaid at a voltage suitable for local distribution.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant, and property of the Corporation, and take records at all reasonable hours.

6. The Commission shall, at least annually, adjust and apportion the amount or amounts payable by the Municipal Corporation, or corporations, for such power and such interest, sinking fund, cost of lost power, and cost of generating, operating, maintaining, repairing, renewing, and insuring said works.

7. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporations and other municipal corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporations and other municipal corporations, supplied by the Commission, having regard to the amounts paid by them, respectively, under the terms of this agreement, and such other considerations as may appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

8. If at any time any other municipal corporation, or pursuant to said Act, any railway or distributing company, or any other corporation, or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation, in writing, of a time and place to hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said works, or any part thereof, are not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable for payment for any portion of the power supplied. No power shall be supplied by the municipal corporation to any railway or distributing company without the written consent of the Commission, but the Corporation may sell power to any person or persons, or manufacturing companies within the limits of the Corporation, but such power shall not be sold for less than cost, neither shall there be any discrimination as regards price and quantity.

9. If differences arise between corporations to which the Commission is supplying power, the Commission may, upon application, fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a commissioner appointed under the *Act respecting Enquiries concerning Public Matters.*

10. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have, respectively, affixed their corporate seals, and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

(Seal.)

MUNICIPAL CORPORATION OF THE POLICE VILLAGE OF HOLSTEIN.

Richard Irwin, *Chairman.*
R. M. Tribe, *Inspecting Trustee.*
L. B. Nicholson, *Secretary.*

(Seal.)

"SCHEDULE "N."

This indenture made this first day of November, A.D. one thousand nine hundred and fourteen.

Between

The Hydro-Electric Power Commission of Ontario, acting herein on its own behalf and with the approval of the Lieutenant-Governor in Council (hereinafter called the Commission), party of the first part;

and

The Municipal Corporation of the Police Village of Williamsburg (hereinafter called the Corporation), party of the second part.

Whereas pursuant to *An Act to Provide for Transmission of Electrical Power to Municipalities*, and the amendments thereto, the Corporation applied to the Commission to transmit and supply such power, and the Commission has entered into contracts with a company or companies for the supply of such power at the prices set forth in the schedule, hereto attached, and the Commission has furnished the Corporation with estimates, as shown in the schedule of the total cost of such power, and the electors of the Corporation assented to by-laws authorizing the Corporation to enter into a contract with the Commission for such power, and the Commission have estimated the line loss and the cost to construct, operate, maintain, repair, renew and insure a line to transmit such power to the Corporation, and have apportioned the part of such cost to be paid by each Corporation as shown in said schedule.

Now therefore this indenture witnesseth that in consideration of the premises and of the agreements of the Corporation herein set forth, subject to the provisions of said Act and the amendments thereto, and of the said contracts subject to any variations thereof by the Corporation, the Commission agrees with the Corporation respectively:

1. (*a*) To construct a line to transmit the quantities of electric power, shown in column 2 of the said schedule, to the Corporation shown in column 1 respectively.

(*b*) On the 15th day of May, 1915, or on any earlier day on which the Commission shall be prepared to supply said power in quantities set forth in column 2 of said schedule, to the Corporation within the limits thereof, ready for distribution at approximately the number of volts set forth in column 4 of the said schedule, and approximately 60 cycles per second frequency.

(*c*) At the expiration of three months' written notice, which may be given by the Corporation from time to time during the continuance of this agreement, to supply from time to time to the Corporation in blocks of not less than 10 h.p. each, additional power until the total amount so supplied shall amount to 15,000 horse power, or such further amount as the Commission may be able and willing to supply.

(*d*) To use at all times first-class, modern, standard commercial apparatus and plant and to exercise all due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Corporation.

In consideration of the premises and of the agreements herien set forth each of the Corporations for itself, and not one for the other, agrees with the Commission:

2. (*a*) Subject to the provisions of paragraph 2 (*g*) hereof, to pay to the Commission for the quantities of power shown in column 2 of said schedule to be supplied as aforesaid from the date when the Commission notifies the Corporation that it is ready to supply such power, and for all additional power held in reserve upon any of the above mentioned notices from the respective dates thereof until the termination of this agreement, the price set forth in column 3 of said schedule in twelve monthly payments, in gold coin of the present standard of weight and fineness, and bills shall be rendered by the Commission on or before the fourth and paid by the Corporation on or before the fifteenth of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of such power to the Corporation in default until said bill is paid. No such discontinuance shall relieve the Corporation in default from the performance of the covenants, provisoes, and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*b*) To take electric power exclusively from the Commission during the continuance of this agreement; provided, if the Commission is unable to supply the said power as quickly as required, the Corporation may obtain the supply otherwise until the Commission has provided such supply, thereupon the Corporation shall immediately take from the Commission; and the Corporation may generate, store or accumulate electric power for emergencies, or to keep down the peak load of the power taken from the Commission; and nothing herein contained shall affect existing contracts between the Corporation and other parties for a supply of electric power, but the Corporation shall determine said contracts at the earliest possible date.

(*c*) To pay, annually, interest at four per cent. per annum upon its proportionate part of the moneys expended by the Commission on capital account for the construction of the said line, transformer stations and other necessary works, shown, respectively, in column 6 of said schedule, subject to adjustment under paragraph 9.

(*d*) To pay an annual sum for its proportionate part of the cost of the construction of said line, stations, and works, shown, respectively, in column 6 of said schedule, subject to adjustment under paragraph 9, so as to form in thirty years a sinking fund for the retirement of the securities to be issued by the Province of Ontario.

(*e*) To bear its proportionate part of the line loss and pay its proportionate part of the cost to operate, maintain, repair, renew and insure the said lines, stations and work, shown, respectively, in column 7 of said schedule subject to adjustment under paragraph 9.

(*f*) To keep, observe and perform the covenants, provisoes and conditions set forth in said contracts, intended by the Commission and the company to be kept and observed and performed.

(*g*) To pay as a minimum for three-fourths of the power to be supplied at said date or of the power held in reserve upon any of the said notices, whether the said power is taken or not; and when the greatest amount of

power taken for twenty consecutive minutes in any month shall exceed during such twenty minutes three-fourths of the amount to be supplied and held in reserve to pay for this greater amount during that entire month; the amount payable for a month being one-twelfth part of the annual rate applicable to the horse power in question. When the power factor of the greatest amount of power taken for said twenty minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*h*) To take no more power than the amount to be supplied and held in reserve at said date and upon said notices, as per paragraph 1 (*c*).

(*i*) To use at all times first-class, modern, standard commercial apparatus and plant to be approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Commission and the company.

3. If, as herein provided, the said contracts are continued until nineteen hundred and forty-two (1942), this agreement shall remain in force until that date.

4. (*a*) Said power shall be three-phase, alternating, commercial continuous twenty-four hour power every day of the year, except as provided in paragraph 6 hereof, and shall be measured by curve-drawing meters, subject to test as to accuracy by either party hereto.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the point of delivery to the Corporation shall constitute the supply and the holding in reserve of all power involved herein, and the fulfilment of all operating obligations hereunder; the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities being under the sole control of the Corporation, its agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation, and take records at all reasonable times on giving to the Corporation six hours' notice of the intention to make such inspection. The Corporation shall have a like right, on giving a like notice, to inspect the apparatus, plant and property of the Commission.

6. In case the Commission or the Company shall at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking said power, or any part thereof, by strike, lock-out, riot, fire, invasions, explosion, act of God, or the King's enemies, or any other cause reasonably beyond their control, then the Commission shall not be bound to deliver such power during such time, and the Corporation shall not be bound to pay the price of said power at the point of delivery by the Company during such time, but the Corporation shall continue to make all other payments, but as soon as

the cause of such interruption is removed the Commission shall without any delay supply said power as aforesaid, and the Corporation shall take the same, and each of the parties hereto shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If, and so often as, any interruption shall occur in the service of the Company, due to any cause or causes other than those provided for by the next preceding paragraph hereof, the Commission shall pay to the Corporation as liquidated and ascertained damages, and not by way of penalty, their respective proportionate shares of whatever sum is payable to the Commission by reason of such interruption; and when the amount thereof has been settled, such sum may be deducted from any moneys payable by the Corporation to the Commission, but such right of deduction shall not in any case delay the said monthly payments, nor shall the Commission be subject to any other liability for any non-delivery.

8. In case any municipal corporation, or any person, firm or corporation which shall contract with the Commission or with any municipal corporation for a supply of power furnished to the Commission by the Company shall suffer damages by the act or neglect of the Company, and such municipal corporation, person, firm or corporation would, if the Company had made the said contracts directly with them, have had a right to recover such damages or commence any proceedings or any other remedy, the Commission shall be entitled to commence any such proceedings or bring such action for or on behalf of such municipal corporation, person, firm or corporation, and notwithstanding any Statute, decision or rule of law to the contrary, the Commission shall be entitled to all the rights and remedies of such municipal corporation, person, firm or corporation, including the right to recover such damages, but no action shall be brought by the Commission until such municipal corporation, person, firm or corporation shall have agreed with the Commission to pay any costs that may be adjudged to be paid if such proceedings or action is unsuccessful. The rights and remedies of any such municipal corporation, person, firm or corporation shall not be hereby prejudiced.

9. The Commission shall at least annually adjust and apportion the amounts payable by municipal corporations for such power and such interest, sinking fund, line loss, and cost of operating, maintaining, repairing, renewing and insuring the line and works.

10. (*a*) If at any time, any other municipal corporation, or, pursuant to said Act, any railway or distributing company or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the corporation, party hereto, in writing, of a time and place, and hear all representations that may be made as to the terms and conditions for such supply.

(*b*) Without discrimination in favour of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, party hereto, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

(*c*) No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation, party hereto, will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application, without the written consent of such corporation.

(*d*) In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable to pay for the power so supplied, by any municipal corporation, to any railway or distributing company, without the written consent of the Commission.

11. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement, for the Corporation and other municipal corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement, the Commission shall determine and adjust the rights of the Corporation and other municipal corporations, supplied by the Commission, having regard to the amounts paid by them, respectively, under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

12. Each of the Corporations agree with the other:

(*a*) To take electric power exclusively from the Commission during the continuance of this agreement, subject to the provisoes above set forth in paragraph 2 (*b*).

(*b*) To co-operate, by all means in its power, at all times with the Commission, to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

13. If differences arise between the Corporations, the Commission may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustments shall be final. The Commission shall have all the powers that may be conferred upon a commissioner appointed under the *Act respecting Enquiries concerning Public Matters.*

14. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*

POLICE VILLAGE OF WILLIAMSBURG.

Orlin Becker, *Secretary.*
P. E. Beckstead, *Chairman.*
E. C. Merkley, *Inspecting Trustee.*

SCHEDULE

| Column 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Name of Municipal Corporation | Quantity of Power applied for in H.P. | Cost of Power at point of delivery to Commission. | No. of Volts. | Estimate maximum cost of power ready for distribution in Municipality. | Estimate proportionate part of cost to construct trans. line, transformer station and works for nominally .....H.P., with total capacity of ..... | Estimate proportionate part of line loss and of part cost of to operate, maintain, repair, renew and insure transmission line, transformer station works for nominally .....H.P., with a capacity of .....H.P. |
| Brockville ..... | 1,000 H.P. | Then for all power taken up to 10,000 H.P. or over $11.00 per H.P. | 13,200 | $24 04 | $76,950 00 | $7,077 00 |
| Prescott ..... | 300 H.P. | | 13,200 | 24 54 | 30,594 00 | 1,838 00 |
| Chesterville ..... | 50 H.P. | | 4,400 | 35 00 | 10,224 00 | 487 00 |
| Winchester ..... | 100 H.P. | | 4,400 | 24 00 | 7,280 00 | 638 00 |
| Williamsburg ..... | 20 H.P. | | 4,000 | 34 66 | 3,522 00 | 272 00 |
| | | $14.00 for not less than 2,000 H.P.<br>Then for all power taken up to 4,000 H.P., $13.40 per H.P.<br>Then for all power taken up to 6,000 H.P., $12.50 per H.P.<br>Then for all power taken up to 8,000 H.P., $12.00 per H.P.<br>Then for all power taken up to 10,000 H.P., $11.50 per H.P. | | (without Sinking Fund) | | |

The Legislature also passed the Act set out hereafter with reference to the "Public Development of Water Power at Niagara Falls."

An Act respecting the Public Development of Water Power in the vicinity of Niagara Falls.

*Assented to 27th April, 1916.*

Preamble. WHEREAS the demand for the supply of electrical power or energy in the district which may be served by power from the vicinity of Niagara Falls has so greatly increased that in order to obtain an adequate supply to meet the present and future demands of the municipalities interested or that may be interested, it is necessary that new sources of power should be developed; and whereas the existing development works at Niagara Falls are inadequate for the development and supply of the required amount of power, the quantity of power now generated by them and available for use in Canada being exhausted; and whereas it is desirable that the work of development should be carried on upon an adequate scale in order to utilize to the fullest possible extent the available supply of water which may be diverted from the Niagara River under the terms of the treaty between the United States of America and His Majesty, the King; and whereas the Hydro-Electric Power Commission of Ontario, after investigation by its engineers, has reported to the Government upon a scheme for the development of a supply of power from the Niagara River and its tributaries, and has prepared estimates of the cost thereof; and whereas there has been a general demand upon the part of the inhabitants of the said municipalities that the Government of Ontario should develop, through the Commission, power sufficient to meet the present and future requirements of the municipalities which it is possible to serve from the neighborhood of Niagara Falls, and that in the meantime the Commission should procure on the best terms available such additional power as may be necessary to supply the requirements of the municipalities and furnish the same to the municipalities at the average cost of all the power supplied to the municipalities under Contract with the Commission; and whereas it is desirable that the said work of development should be undertaken and carried out as economically, efficiently, and expeditiously as possible, taking into consideration the financial and other conditions arising out of the present war, and to this end that it should be conducted by the Commission, and under the authority and direction of the Government of Ontario, acting for and on behalf of the municipalities which may be supplied with power from such development;

Therefore His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario enacts as follows:—

**1.** This Act may be cited as *The Ontario Niagara Development Act.* Short title.

**2.** In this Act— Interpretation.

(*a*) "Commission" shall mean Hydro-Electric Power Commission of Ontario; "Commission."

"Government."

(*b*) "Government" shall mean Lieutenant-Governor in Council acting for and on behalf of the Province of Ontario;

Powers which the Crown may confer upon the Commission.

**3.** The Government may authorize the Commission to—

Entering on and laying out land.

(*a*) Enter upon, survey and lay out, all such lands, water, water privileges and water powers as may be required for the construction of the works hereinafter mentioned;

Acquiring options and making contracts for purchase of lands.

(*b*) Acquire options upon and enter into preliminary contracts for the purchase of land for sites, right-of-way, the location of buildings, plant, works, machinery and appliances required for the works herinafter mentioned;

Constructing works, etc.

(*c*) Construct, erect, maintain and operate works for the purpose of diverting the waters of the Niagara River, Welland River, and tributary waters, or any of them, and conveying the same by aqueduct, conduit or canal, or in any other manner, from any point on the Welland River, or on the Niagara River, above the Cataract, and discharging such waters into the Niagara River;

Development works.

(*d*) Construct, erect, maintain and operate at or in the vicinity of such place of discharge, works, plant, machinery and appliances for the use of the waters so taken and diverted in the development of a water power for the production of electrical or pneumatic power or energy;

General powers.

Rev. Stat. c. 39.

(*e*) For such purposes, exercise all powers and enforce all rights which may be exercised and enforced by the Commission when taking land or other property in the exercise of powers conferred by or under *The Power Commission Act.*

Cost to be defrayed out of appropriation.

**4.**—(1) The cost of the construction and maintenance of the works authorized by this Act shall be defrayed out of such money as may, from time to time, be appropriated by the Legislature for that purpose, and the works which may be authorized under section 3 shall be carried out and constructed as far as possible in such a manner that an appropriation made in any one fiscal year shall not be exceeded by the cost of the work to be carried out in that year.

Payments to Commission.

(2) The Government may direct the Treasurer of Ontario from time to time to pay over to the Commission out of such sums, any sums which may be required to defray the cost of the works carried on by the Commission under this Act, and all such sums shall be duly accounted for as hereinafter provided.

Special account to be opened.

**5.**—(1) Upon receiving the authority provided for by section 4, the Commission shall open an account to be styled "The Niagara Power Development Works Account," and such account shall contain an accurate and detailed statement:—

(*a*) Of all sums received by the Commission from the Government, for the purposes of the works hereby authorized; and

(*b*) An accurate and detailed statement of the cost of the work, including the services of the engineers, surveyors, and other officers of the Commission, and such proportion of the expenses of the administration of the Commission as may be fixed by Order-in-Council as fairly chargeable to the works undertaken and operated under the provisions of this Act.

Auditors.

(2) The Government may appoint an auditor whose duty it shall be, by himself or his deputy, to examine, check and audit all accounts chargeable against the account mentioned in subsection 1, and certify them before payment thereof, and the auditor, or his deputy, shall countersign all cheques issued against the said account.

Annual audit.

(3) The account shall be examined and audited at least once in and for every fiscal year by a chartered accountant nominated by the Government, who shall make his report to the Government thereon.

Annual statement to Assembly.

(4) The Government shall cause a full and detailed statement of the operations carried on under the authority of this Act, and of all the receipts and expenditures on account thereof, during the last preceding fiscal year, together with the report mentioned in subsection 3, to be laid before the Assembly within fifteen days after the opening of each session.

Provisional arrangements for supply.

**6.**—(1) Until an adequate supply of power from the works authorized by this Act can be developed and transmitted to the municipalities, the Commission, with the approval of the Government, may procure upon the best terms available a supply of such additional power as may be necessary to meet the requirements of the municipalities over and above the 100,000 h.p. supplied under the terms of the contract heretofore entered into between the municipalities and the Commission, and such additional power shall be furnished to the municipalities at the average cost of all the power supplied to the municipalities under contract with the Commission for the supply of power from Niagara Falls and the vicinity.

Additional cost—adjustment of.

(2) The additional cost to the municipalities of the power procured under the authority of section 1, shall be included in the price per h.p. payable by a municipal corporation under the terms of the contract entered into with the Commission, and shall be annually adjusted and apportioned by the Commission as provided by *The Power Commission Act*.

Rev. Stat. c. 39.

Extent of operation of Act.

**7.** The exercise of the powers, which may be conferred by or under the authority of this Act, or of any of them, shall not be deemed to be a making use of the waters of the Niagara River to generate electric or pneumatic power within the meaning of any stipulation or condition contained in any agreement entered into by the Commissioners for the Queen Victoria Niagara Falls Park.

An Act was also passed to regulate the use of the waters of the Province of Ontario for power development purposes.

An Act to regulate the use of the Waters of the Province of Ontario for Power Development Purposes.

*Assented to 27th April, 1916.*

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

**1.** This Act may be cited as *The Water Powers Regulation Act, 1916.*

Interpretation.

**2.** In this Act,

"Power."

(*a*) "Power" shall mean and include hydraulic, electrical, or pneumatic power or energy;

"Owner of a water power."

(b) "Owner of a water power" shall mean and include every municipal corporation, company, firm or individual being or claiming to be the owner, lessee, licensee, occupant, tenant, or assignee of a right to use any of the waters of Ontario for the purpose of generating hydraulic, electrical, or pneumatic power or energy under any grant, lease or license from the Crown, or any person, or under contract with, or franchise from any public body representing the Crown or the Province of Ontario or under the general law or any special Act of this Legislature or otherwise;

"Inspector."

(*c*) "Inspector" shall mean a commission, public body, or person designated by the Lieutenant-Governor in Council to act as Inspector under this Act, and shall include the officers, agents and servants of the Inspector employed and acting under the authority and direction of such Inspector;

"Works."

(*d*) "Works" shall mean and include every dam, wing dam, forebay, gate, rack, canal, conduit, pipe, aqueduct, penstock, tunnel, and every other work which has been or may be constructed or used for or in connection with the control or diversion of water and the conveying of it to a power house or other place at which power may be generated; and all buildings, structures, plant, machinery, appliances and other works and things now or hereafter used for or appurtenant to the production and generation of power;

"Regulations."

(*e*) "Regulations" shall mean regulations made by the Lieutenant-Governor in Council under the authority of this Act.

Duty of owner as to use of water.

**3.** It shall be the duty of every owner of a water power to ensure as far as possible the economical and efficient use of the water used by him.

**4.** The Lieutenant-Governor in Council may appoint an Inspector or Inspectors who may, in addition to the powers hereinafter mentioned when required by the Lieutenant-Governor in Council so to do, Appointment of Inspector.

(*a*) At all reasonable times enter upon any works, and examine and inspect the same; Inspection.

(*b*) Take such measurements and tests as may be necessary from time to time in order to determine or to fix, as the case may be, in respect of the owner of any water power: Measurements and tests.

(i) The quantity of water used, permitted to be used or available for use;

(ii) Operating head and head losses;

(iii) Electrical and hydraulic efficiency of main or auxiliary machinery or of any other portion of the works, or of the works as a whole;

(iv) The amount of power developed, permitted to be developed, or available for development;

(v) Fix in terms of cubic feet per second the amount of water necessary to use in order to develop or generate any amount of horse-power or to exercise any water rights for any purpose;

(*c*) Require the production of books, records, charts, readings, maps, plans, load curves and all other documents and records pertaining to the matters to be investigated, enquired into or determined under the provisions of this Act; Production of records, etc.

(*d*) If it appears to him that the water permitted to be used is not being utilized with a proper degree of efficiency or economy, or that the works or any part of the works are so constructed, or are of such a type, or have so depreciated that the water cannot be used with a proper degree of efficiency or economy, after giving the interested parties a reasonable opportunity to be heard, order the water to be used, or the machinery or the works or any part of them, to be replaced or removed, altered, or reconstructed as the case may be, in such manner or to such an extent as may be necessary to secure the proper degree of efficient and economical use of the water; and Ordering alterations in works, etc.

(*e*) If any order so made is not carried out within a reasonable time, enter upon the works and, at the expense of the owner of a water power, shut off or reduce the supply of water or close the works or any part thereof in such a manner as to prevent further use until such order has been obeyed. Shutting off water or closing works.

Appeal to Lieutenant-Governor in Council.

**5.**—(1) Where an order made by the Inspector calls for alterations, repairs or improvements in the works there may be an appeal from the order of the Inspector to the Lieutenant-Governor in Council, and the Lieutenant-Governor in Council may make such order in the premises as may be deemed meet, which order shall be final.

Reference to determine compensation where owner not commercially benefited by alterations, etc.

(2) Upon such appeal, if the Lieutenant-Governor in Council is of the opinion that the additions, alterations or improvements required to be made in the works will be of material public advantage, by reason of the more efficient or economical use of the water, and that the owner of the water power will not presently receive a corresponding commercial advantage from such alterations or improvements, the Lieutenant-Governor in Council may direct a reference to determine what compensation, if any, should be made to the owner of the water power by reason of his being compelled to make such additions, alterations or improvements; and upon such reference all the circumstances shall be taken into account and if the referee is of opinion that the owner is entitled to compensation the referee may fix the amount thereof at such sum as he may deem just and reasonable, and upon the owner carrying out the order of the Inspector or of the Lieutenant-Governor in Council, the amount so awarded shall be payable to the owner in the same manner as a judgment recovered against the Crown in any court in Ontario.

Duty of owner as to inspection.

**6.** It shall be the duty of the owner of a water power, subject to the right of appeal hereinbefore given, to obey at all times the orders of the Inspector and to afford every facility for carrying out this Act and the regulations, and every owner of a water power who neglects or refuses to carry out any such order, or who obstructs or hinders or delays the Inspector or refuses to furnish him with such information and records as he may require, shall incur a penalty of not less than $300 nor more than $2,000, and each and every day on which such offence is committed or continued shall be deemed to create a separate offence.

Penalty.

Fixing quantity of water to be taken in exercise of rights.

**7.** Where any lease, license, Order-in-Council or other instrument or any general or special statutory provision confers or purports to confer the right to develop or generate power measured expressly or impliedly in horsepower, or where any such instrument or provision confers or purports to confer a right of division or use of water defined wholly or in part by the character, location or dimensions of works, the Inspector may fix in terms of cubic feet per second the amount of water which it is necessary to use in order to develop or generate such power or to exercise such right, having regard to the location of the works and to all the circumstances of the case, and to the degree of efficiency which the owner of the water power should be required to maintain in the premises.

Submission and approval of plans.

**8.** Every owner of a water power, before proceeding with the construction of any works or any alteration or extension of existing works or with the purchase or installation of new works, shall submit to an Inspector plans and specifications showing the details of the proposed construction, alteration or extension or of the new works proposed to be

purchased or installed, and he shall not proceed therewith or let contracts therefor until such plans and specifications have been approved by the Inspector.

Limitation and definition of rights by Lieutenant-Governor in Council.

**9.**—(1) Where the rights of the owner of a water power to use water for the purpose of generating power do not appear to be expressly or impliedly limited by any stipulation as to the quantity of water to be used or as to the amount of horsepower which may be generated or otherwise, and the Lieutenant-Governor in Council deems it desirable in the public interest that such rights should be specifically limited and defined, he may direct the Inspector to enquire and report as to (1) the amount of power which the owner of a water power is authorized to generate under any contract, lease, license or other instrument, or under any general or special Act of this Legislature or otherwise, and (2) as to the quantity of water which it is necessary, having due regard to efficiency and economy in development, to use for the purpose of generating such amount of power, and upon such report the Lieutenant-Governor in Council may fix and determine, in horsepower, the amount of power which the owner shall generate and in terms of cubic feet per second the amount of water which it is necessary to use in order to develop or generate such power.

Reference to ascertain rights affected.

(2) If the owner is dissatisfied with the construction so placed upon his rights, or with such limitation and definition, the Lieutenant-Governor in Council may, upon the application of the owner, direct a reference to ascertain what rights, if any, have been restricted or impaired by such limitation and definition, and if it is found that such rights exist, and that they are so restricted or impaired, to ascertain the compensation that should be paid to such owner for such restriction or impairment.

Payment of compensation.

(3) The amount of the compensation awarded to the owner upon such reference shall be paid to him in the same manner as the amount of a judgment recovered against the Crown.

Limitation of rights of owner by Order-in-Council.

**10.**—(1) Where the Lieutenant-Governor in Council deems that the public interest requires that any rights heretofore conferred upon the owner of a water power should be restricted or limited in any particular, he may by Order-in-Council limit, define or restrict such rights to the construction, operation and use of such works only as may be deemed expedient in the public interest.

Reference to determine compensation.

(2) If the owner deems himself aggrieved by any such limitation, definition or restriction, the Lieutenant-Governor in Council may direct a reference to determine what compensation, if any, should be paid to the owner, and the referee shall have the like powers and shall proceed in the same manner, and the amount awarded shall be payable in the same way as in the case of a reference under section 9.

Matters to be considered on reference.

**11.**—(1) Upon any reference under this Act, the referee shall take into consideration

(*a*) The conditions under which any rights to generate or develop power were originally obtained;

(*b*) The consideration paid or agreed to therefor;

(*c*) The capital invested in any works by the owner of a water power;

(*d*) The circumstances which render any limitation or restriction of such rights necessary and desirable in the public interest.

Powers of Commissioner

Rev. Stat. c. 18.

(2) The referee, upon any inquiry under this Act directed by the Lieutenant-Governor in Council, shall have all the powers which may be conferred upon a commissioner under *The Public Inquiries Act.*

Regulations by Lieutenant-Governor in Council.

**12.** The Lieutenant-Governor in Council may make regulations respecting

Rev. Stat. c. 18.

(*a*) The procedure to be followed by the Inspector and for conferring upon him the powers of a commissioner under *The Public Inquiries Act;*

(*b*) The form and term of notices to be given by the Inspector and the enforcement of his orders;

(*c*) The appointment of officers, servants and agents by the Inspector and their duties and powers;

(*d*) The procedure to be followed upon any appeal from an order of the Inspector;

(*e*) Any returns to be made by the owner of a water power and the particulars to be stated in such returns;

(*f*) The better carrying out of the provisions of this Act in general.

And the following Act was also passed by the Legislature of the Province of Ontario, during the Session of 1916, being "An Act to Amend *The Hydro-Electric Railway Act,* and to Confirm Certain By-laws and Contracts," as set out therein.

An Act to amend *The Hydro-Electric Railway Act* and to confirm certain By-laws and Contracts.

*Assented to 27th April, 1916.*

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

**1.** This Act may be cited as *The Hydro-Electric Railway Act, 1916.* Short title.

**2.** Subsections 4 and 5 of section 4 of *The Hydro-Electric Railway Act, 1914,* are repealed and the following substituted therefor:— 4 Geo. V., c. 31, s. 4, subs. 4, 5, repealed.

(4) The agreement shall not be submitted to the electors nor shall any by-law for that purpose be proceeded with by the council of the corporation until the terms of the agreement have been submitted to and have received the sanction of the Lieutenant-Governor in Council. By-law and agreement to be first approved by Lieutenant-Governor in Council.

(5) After such sanction shall have been obtained the council of the municipal corporation, or of each of the municipal corporations interested, may submit to the vote of the municipal electors authorized to vote on money by-lays, a by-law approving of the agreement and directing its execution, and if a majority of such electors vote in favour of the by-law, the council shall pass the same and the agreement shall be executed as directed by the by-law. Submission of by-law

(*a*) The by-law shall not be voted upon by the electors until at least three months have expired since the date of the sanctioning of the agreement by the Lieutenant-Governor in Council nor until the by-law and agreement have been published in the manner provided by *The Municipal Act* in the case of money by-laws, at least once a week for four successive weeks. Rev. Stat. c. 192.

**3.** Subsection 6 of section 4 of *The Hydro-Electric Railway Act, 1914,* as enacted by section 3 of *The Hydro-Electric Railway Act, 1915,* is repealed, and the following substituted therefore:— 4 Geo. V., c. 31, s. 4, subs. 6, amended. 5 Geo. V., c. 32.

6. The agreement may include in its terms the purchase or leasing or obtaining running rights over any steam railway, electrical railway, or street railway or any part thereof, as part of the line of railway to be constructed and operated by the Commission. Acquiring running rights, etc.

Municipal corporation not to sell, etc., any railway without assent of electors.

**4.** Notwithstanding anything contained in any general or special Act heretofore passed by this Legislature, a municipal corporation shall not sell or otherwise dispose of any steam railway, electrical railway or street railway owned by it or of which it has acquired control by foreclosure or other proceedings or under the provisions of any special Act, unless and until a by-law authorizing such sale or other disposal has been submitted to and has received the assent of the municipal electors qualified to vote on money by-laws according to the provisions of *The Municipal Act*.

Rev. Stat. c. 192.

By-law approved.

**5.**—(1) The by-law, the form of which is set out in Schedule "A" to this Act, and which has been heretofore submitted to the vote of the municipal electors of the municipalities named in Schedule "B" to the said by-law is declared to have been so submitted in due compliance with the provisions of *The Hydro-Electric Railway Act, 1914*, and when finally passed by the council of any of the municipalities named in the contract appended to the by-law shall be legal, valid and binding upon the corporation and the ratepayers thereof, anything in any general or special Act of this Legislature to the contrary notwithstanding.

4 Geo. V., c. 31.

Council to pass by-law when assented to.

(2) It shall be the duty of the council of every municipality in which such by-law has been approved, or shall hereafter be approved by the electors, to finally pass the by-law and give effect to the same.

By-laws heretofore passed confirmed.

(3) The by-laws enumerated in Schedule "B" to this Act are confirmed and declared to be legal, valid and binding upon the respective corporations named in Schedule "B" and the ratepayers thereof, anything in any general or special Act relating to such corporation to the contrary notwithstanding.

Agreement confirmed.

**6.** Subject to the provisions hereinafter contained, the contract set out in Schedule "A" to this Act, and purporting to be made between the Hydro-Electric Power Commission of Ontario, of the first part, and certain municipal corporations shall be deemed to have been made in pursuance of *The Hydro-Electric Railway Act, 1914*, and to comply with the provisions thereof, and the said contract shall be legal, valid and binding upon the Commission and upon every municipal corporation a party thereto and executing the same, anything in the said Act or in any other general or special Act of this Legislature to the contrary notwithstanding.

Execution of agreement.

**7.** It shall be the duty of the head and the clerk or treasurer of each of the said municipal corporations to sign the said contract and affix the seal of the corporation thereto within three weeks after the passing of the by-law approving of the same, whether the same shall have been so submitted before or after the passing of this Act.

Debentures issued under 4 Geo. V., c. 31, not to be included in municipal debt for certain purposes.

**8.** Notwithstanding anything in *The Municipal Act* contained, debentures issued or purporting to be issued by a municipal corporation under the authority of *The Hydro-Electric Railway Act, 1914,* for the purpose of carrying out any contract entered into with the Commission under the authority of the said Act shall not be included in ascertaining the limit of the borrowing powers of the Corporation as prescribed by *The Municipal Act.*

4 Geo. V., c. 31, when work under contract may be proceeded with.

**9.** Notwithstanding anything in this Act, or in *The Hydro-Electric Railway Act, 1914,* or the amendments thereto:—

(*a*) No bonds shall be issued for, nor shall any work be undertaken, or expense incurred upon the railways provided for in the contract mentioned in Section 6, until after the close of the present war; and

(*b*) No such bonds shall be issued, or work undertaken, or expense incurred thereafter, except at such times and to such amount or extent, and within such periods as may be authorized from from time to time by the Lieutenant-Governor in Council;

but the Lieutenant-Governor in Council may, at any time after the passing of this Act, authorize the Commission to enter into agreements for the purchase of the right-of-way for any part of such railways, or for the procuring of options therefor.

SCHEDULE "A."

MUNICIPALITY OF THE OF BY-LAW No.

A By-law to authorize a certain agreement made between The Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the of , and other municipal corporations, for the construction, equipment and operation of an Electric Railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

Whereas it is expedient that the Corporation of the of , and other municipal corporations should enter into an agreement under *The Hydro-Electric Railway Act, 1914*, and amendments thereto, with the Hydro-Electric Power Commission of Ontario, hereinafter called the Commission, for the construction, equipment and operation of an electric railway in and through the Municipality of the of , and certain other municipalities, upon the terms and conditions and subject to the provisions set forth and contained in the agreement set out in this by-law, and according to the routes set forth in Schedule "A" to the said agreement;

And whereas the estimated cost of the work under the said agreement is $13,734,155; and whereas the portion of the cost of the construction and equipment of the line to be borne by the Corporation of the Municipality of the of is estimated at $ , as set out in Schedule "B" to the said agreement, subject to adjustments and apportionment between the Corporations by the Commission from time to time, as provided by the said agreement;

And whereas the total amount estimated to be required for the maintenance of the railway, apart from operating expenses, is $214,583 (the operating revenue being estimated at $1,692,175, and operation and maintenance at $817,025);

And whereas the total annual amount estimated to be required, for the period of ten years immediately following the date of the issue of the bonds to be issued under the said agreement, for interest on the said bonds, is $686,708; and thereafter, for the next ensuing forty years, the annual amount estimated to be required for sinking fund charges for the retirement of the said bonds is $137,342, and for interest on the said bonds $686,708;

And whereas the portion to be borne by the Municipality of the of of the said annual amounts estimated to be required for maintenance, sinking fund charges and interest is estimated at $ for the first ten years, as aforesaid, and thereafter at $ on the same basis as the portion of the cost of construction and equipment, as aforesaid, subject to adjustments and apportionment between the Corporations by the Commission from time to time as provided by the said agreement;

And whereas the amount of the whole rateable property of the Corporation according to the last revised assessment roll is $ , and the amount of the debenture debt of the Corporation is $ , of which neither principal nor interest is in arrear;

And whereas only a portion of the Municipality of the of as enumerated in Schedule "C" to the said agreement, is served by said railway;

Therefore the Municipal Council of the Corporation of the of enacts as follows:—

1. It shall be lawful for the Corporation of the of , and the said Corporation is hereby authorized to enter into the following agreement with the Hydro-Electric Power Commission of Ontario and other corporations, the said agreement being hereby incorporated into and forming a part of this by-law, and the and Clerk of the Corporation are hereby authorized and directed to execute the said agreement upon behalf of this Corporation and to attach the Seal of the Corporation thereto.

2. Only those duly qualified electors residing in the of , in the district enumerated in Schedule "C" of said agreement shall be entitled to vote on the By-law, and any rate required to be levied for payment of debentures or interest thereon shall be raised, levied and collected from the rateable property in such district only.

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AGREEMENT HEREINBEFORE REFERRED TO.

This indenture made the day of in the year of our Lord, one thousand nine hundred and

Between

The Hydro-Electric Power Commission of Ontario (hereinafter called the "Commission") of the first part;

and

The Municipal Corporations of the Township of London, the Township of Trafalgar, the Township of Waterloo, the Township of Blanshard, the Township of Wilmot, the Township of Downie, the Township of South Easthope, the Township of Toronto, the Township of Nassagaweya, the Township of Guelph, the Township of Etobicoke, the Township of North Easthope, the Township of Biddulph, the Township of Esquesing, the Township of Puslinch, the Township of Eramosa, the Township of Nelson, the Township of Ellice, the Township of East Zorra, the City of Toronto, the City of London, the City of Berlin, the City of Guelph, the City of Stratford, the Town of Waterloo, the Town of St. Mary's, the Town of Milton, the Village of Mimico, the Village of New Toronto, the Village of Port Credit, and the Village of New Hamburg (hereinafter called the "Corporations"), of the second part.

Whereas pursuant to the *Hydro-Electric Railway Act, 1914*, and amendments thereto, the Commission was requested to enquire into, examine, investigate and report upon the cost of construction and operation of an electric railway or railways to be constructed through certain districts in which the Corporations are situated, together with the probable revenue that would result from the operation of such railway or railways;

And whereas the Commission has furnished the Corporations with such a report showing (1) the total estimated cost, operating revenue and expenses of the railway or railways, and (2) the proportion of the capital cost to be borne by each of the Corporations as set forth in Schedule "B" attached hereto;

And whereas on receipt of the said report the Corporations requested the Commission to construct, equip and operate a system of electric railways (hereinafter called the railway) over the routes laid down in Schedule "A" attached hereto, upon the terms and conditions and in the manner herein set forth;

And whereas the Commission has agreed with the Corporations on behalf of the Corporations to construct, equip and operate the railway upon the terms and conditions and in the manner herein set forth; but upon the express conditions that the Commission shall not in any way be liable by reason of any error or omission in any estimates, plans or specifications for any financial or other obligation or loss whatsoever by virtue of this agreement or arising out of the performance of the terms thereof;

And whereas the electors of each of the Corporations have assented to by-laws authorizing the Corporations to enter into this agreement with the Commission for the construction, equipment and operation of the railway as laid down in the said schedules, subject to the following terms and conditions;

And whereas the Corporations have each issued debentures for the amounts set forth in Schedule "B" attached hereto, and have deposited the said debentures with the Commission;

Now, therefore, this indenture witnesseth:—

1. In consideration of the premises and of the agreements of the Corporations herein contained, and subject to the provisions of the said Act and amendments thereto, the Commission agrees with the Corporations respectively:—

(*a*) To construct, equip and operate the railway through the districts in which the Corporations are situate on behalf of the Corporations;

(*b*) To construct and operate the railway over the routes laid down in Schedule "A";

(*c*) To issue bonds, as provided in paragraph 3 of this agreement, to cover the cost of constructing and equipping the railway;

(*d*) To furnish as far as possible first-class modern and standard equipment for use on the railway, to operate this equipment so as to give the best service and accommodation possible, having regard to the district served, the type of construction and equipment adopted and all other equitable conditions, and to exercise all due skill and diligence so as to secure the most effective operation and service of the railway consistent with good management;

(*e*) To regulate and fix the fares and rates of toll to be collected by the railway for all classes of service;

(*f*) To utilize the routes and property of the railway for all purposes from which it is possible to obtain a profit;

(*g*) To combine the property and works of the railway and the power lines of the Commission where such combination is feasible and may prove economical to both the railway and the users of the power lines;

(*h*) To permit and obtain interchange of traffic with other railways wherever possible and profitable;

(*i*) To supply electrical power or energy for operation of the railway at rates consistent with those charged to municipal corporations;

(*j*) To apportion annually the capital costs and operating expenses of all works, apparatus and plant used by the railway in common with the Commission's transmission lines in a fair manner, having regard to the service furnished by the expenditure under consideration;

(*k*) To apply the revenue derived from operation of the railway and any other revenue derived from the undertaking to the payment of operating expenses (including electrical power), the cost of administration, and annual charges for interest and sinking fund on the money invested, and such other deductions as are herein provided for;

(*l*) To set aside from any revenue thereafter remaining an annual sum for the renewal of any works belonging in whole or in part to the undertaking;

(*m*) To pay over annually to the Corporations, if deemed advisable by the Commission in the interests of the undertaking, any surplus that may remain after providing for the items above mentioned. The division of such surplus between the Corporations to be fixed by the Commission on an equitable basis, having regard in the case of each Corporation to the capital invested, the service rendered, the comparative benefits derived, and all other like conditions;

(*n*) To take active steps for the purpose of constructing, equipping and operating the railway at the earliest possible date after the execution of this agreement by the Corporations and the deposit of the debentures as called for under clause 2 (*b*) hereof and to commence operation of each section as soon as possible after its completion;

(*o*) To make such extensions of the railway described in Schedule "A" as may appear advantageous and profitable from time to time.

2. In consideration of the premises and of the agreements herein set forth, each of the Corporations, for itself, and not one for the other, agrees with the Commission:

(*a*) To bear its share of the cost of constructing, equipping, operating, maintaining, repairing, renewing and insuring the railway and its property and works as established by the Commission, subject to adjustments and apportionment between the Corporations by the Commission from time to time;

(*b*) To issue debentures for the amounts set forth in Schedule "B" maturing in fifty years from the date of issue thereof, and payable yearly at the Bank, at Toronto, Ontario. Such debentures shall be deposited with the Commission previous to the issuing of the bonds mentioned above, and may be held or disposed of from time to time by the Commission, as provided for in clause 4 hereof, in such amounts, at such rates of discount or premium, and on such terms and conditions as the Commission in its sole discretion shall deem to be in the interests of the railway, the proceeds of such debentures being used solely for the purposes herein contained. The amount of debentures of each Corporation sold or disposed of from time to time shall be such proportion as may be fixed by the Commission of the total amount of debentures, due regard being given to the capital invested, the service rendered, the comparative revenue derived, and all other equitable conditions;

(*c*) To make no agreement or arrangement with, and to grant no bonus, license or other inducement to any other railway or transportation company without the written consent of the Commission;

(*d*) To keep, observe and perform the covenants, provisoes and conditions set forth in this agreement intended to be kept and observed and performed by the Corporations, and to execute such further or other documents and to pass such by-laws as may be requested by the Commission for the purpose of fully effectuating the objects and intent of this agreement;

(*e*) To furnish a free right of way for the railway and for the power lines of the Commission over any property of the Corporations upon being so requested by the Commission, and to execute such conveyance thereof or agreement with regard thereto as may be desired by the Commission.

3. It shall be lawful and the Commission is hereby authorized to create or cause to be created an issue of bonds, and to sell or dispose of the same on behalf of the Corporations. Such bonds to be charged upon and secured by the railway, and all the assets, rights, privileges, revenues, works, property and effects belonging thereto or held or used in connection with the railway constructed, acquired, operated and maintained by the Commission under this agreement, and to be for the total amounts mentioned in Schedule "B" hereto attached; provided that the Commission may, upon obtaining the consent as herein defined of the majority of the Corporations, increase the said bond issue by any amount necessary to cover the capital cost of extending the railway, and may also without such consent increase the said bond issue to cover the cost of additional works or equipment of any kind for use on the railway to an extent not exceeding ten per cent. (10%) of the bonds issued from time to time. In order to meet and pay such bonds and interest as the same becomes due and payable the Commission shall in each year after the expiration of ten years from the date of the issue of the bonds out of the revenue of the railway after payments of operating expenses (including electrical power) and the cost of administration set aside a sufficient sum to provide a sinking fund for the purpose of redeeming the same at maturity. Debentures issued by the Corporations in compliance with clause 2 (*b*) hereof, shall, to the extent of the par value of any bonds outstanding from time to time, be held or disposed of by the Commission in trust for the holders of such bonds as collateral security for payment thereof, it being understood and agreed that in the event of any increase of the said bond issue each Corporation shall, upon the request of the Commission, deposit with the Commission additional

debentures as described in clause 2 (*b*) hereof, to be held or disposed of by the Commission as collateral security for such increase of the said bond issue, and that any debentures held by the Commission in excess of the par value of the outstanding bonds from time to time may be held or disposed of by the Commission to secure payment of any deficit arising from the operation of the railway.

4. In the event of the revenue derived from the operation of the undertaking being insufficient in any year to meet the operating expenses (including electrical power), the cost of administration and the annual charges for interest and sinking fund on the bonds, and for the renewal of any works belonging in whole or in part to the railway, such deficit shall be paid to the Commission by the Corporations upon demand of and in the proportion adjusted by the Commission. In the event of the failure of any corporation to pay its share of such a deficit as adjusted by the Commission, it shall be lawful for the Commission in the manner provided in clause 2 (*b*) to dispose of debentures held by the Commission as security for any such deficit. Any arrears by any Corporation shall bear interest at the legal rate.

5. Should any Corporation fail to perform any of the obligations to the Commission under this agreement, the Commission may, in addition to all other remedies and without notice, discontinue the service of the railway to such Corporation in default until the said obligation has been fulfilled, and no such discontinuance of service shall relieve the Corporation in default from the performance of the covenants, provisoes and conditions herein contained.

6. In case the Commission shall at any time or times be prevented from operating the railway or any part thereof by strike, lockout, riot, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond its control, then the Commission shall not be bound to operate the railway or such part thereof during such time; but the Corporations shall not be relieved from any liability or payment under this agreement, and as soon as the cause of such interruption is removed the Commission shall, without any delay, continue full operation of the railway, and each of the Corporations shall be prompt and diligent in doing everything in its power to remove and overcome any such cause or causes of interruption.

7. It shall be lawful for, and the Corporations hereby authorize the Commission to unite, the business of the railway with that of any other railway system operated in whole or in part by the Commission, and to exchange equipment and operators from one system to the other, proper provision being made so that each system shall pay its proportionate share of the cost of any equipment used in common.

8. If at any time any other municpal corporation applies to the Commission for an extension of the railway into its municipality, the Commission shall notify the applicant and the Corporations, in writing, of a time and place to hear all the representations that may be made as to the terms and conditions relating to such proposed extension. If, on the recommendation of the Commission, such extension shall be authorized, without discrimination in favour of the applicant, as to the cost incurred or to be incurred for or by reason of any such extension, the Commission may extend the railway upon such terms and conditions as may appear equitable to the Commission.

No such application for an extension of the railway into any municipality the Corporation of which is not a party to this agreement shall be granted if it is estimated by the Commission that the cost of service of the railway to the Corporations parties hereto will be thereby increased or the revenue and accommodation be injuriously affected without the written consent of the majority of the Corporations parties hereto.

9. The consent of any Corporation required under this agreement shall mean the consent of the council of such Corporations, such consent being in the form of a municipal by-law duly passed by the council of the Corporation.

10. The Commission shall, at least annually, adjust and apportion between the Corporations the cost of construction, equipment operation, interest, sinking fund, and also the cost of renewing the property of the railway.

11. Every railway and all the works, property and effects held and used in connection therewith, constructed, acquired, operated and maintained by the Commission under this agreement and the said Act shall be vested in the Commission on behalf of the Corporations; but the Commission shall be entitled to a lien upon the same for all money expended by the Commission under this agreement and not repaid.

12. Each of the Corporations covenants and agrees with the other:

(*a*) To carry out the agreements and provisions herein contained.

(*b*) To co-operate by all means in its power at all times with the Commission to create the most favourable conditions for the carrying out of the objects of the agreement and of the said Act, and to increase the revenue of the railway and ensure its success.

13. In the event of any difference between the Corporations, the Commission may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Commission shall adjust such differences, and such adjustments shall be final. The Commission shall have all the powers that may be conferred upon a commissioner appointed under *The Act Respecting Enquiries Concerning Public Matters.*

14. This agreement shall continue and extend for a period of fifty years from the date hereof, and at the expiration thereof be subject to renewal, with the consent of the Corporations from time to time for like periods of fifty years, subject to adjustment and re-apportionment as herein provided for the purposes of this agreement as though the terms hereof had not expired. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporations, having regard to the amounts paid or assumed by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

15. It is understood and agreed that the rates imposed for the share of the cost to be borne by those municipalities listed in Schedule "C" attached hereto, shall be imposed upon the rateable property set forth respectively in the said schedule.

16. This agreement shall not come into effect until it has been sanctioned by the Lieutenant-Governor in Council.

In witness whereof the Commission and the Corporations have respectively affixed their corporate seals and the hands of their proper officers.

SCHEDULE "A."

ROUTES:

*Toronto Terminal-Humber River Section:*

From the passenger terminal located near the foot of Yonge Street the line will run westerly to Sunnyside, using Harbour Board property and private right-of-way wherever possible; thence to the Humber River the line will parallel the G.T.R. as at present constructed.

*Humber River-Port Credit Section:*

From the west limits of the City of Toronto at the Humber River, the line runs westerly parallel to the G.T.R. main line. It crosses the Credit River at a point between the Lake Shore Road and the G.T.R.

*Port Credit-Milton Section:*

Leaving Port Credit the line crosses the G.T.R. about one mile west, running thence to a point north of Sheridan P.O., and from there directly to Milton.

*Milton-Guelph Section:*

Crossing the C.P.R. west of the C.P.R. station at Milton, location runs to Township of Esquesing, thence to Township of Nassagaweya, thence to Township of Puslinch, and thence in the general direction of the Eramosa River to Guelph.

*Guelph-Berlin Section:*

From Guelph the line continues to Berlin, leaving Guelph in a westerly direction and entering Berlin from the northeast. The location lies north of the present G.T.R. between Guelph and Berlin.

*Berlin-Stratford Section:*

From Berlin the line runs to the G.T.R. main line, which it parallels to a point near Baden, and thence south of the G.T.R. to a point east of Stratford, where it will cross the G.T.R. and enter the city.

*Stratford-St. Mary's Section:*

From Stratford the line runs in a westerly direction parallel to the old main line of the G.T.R. to a point north of St. Mary's.

*St. Mary's-London Section:*

The line runs in a south-westerly direction through St. Mary's and thence westerly, crossing the Canadian Pacific Railway at grade, and over the Thames River, running thence parallel to the old main line of the Grand Trunk Railway to a point near Granton; thence in a southerly direction through Biddulph Township to the northern boundary of London Township; thence in a southeasterly direction from concessions 14 to 10, inclusive, in London Township. From this point the line runs in a southerly direction through concessions 9 to 4, inclusive; thence following the Thames River through concessions 3 to 1, inclusive, in London Township, to a point

between the Sarnia road and the Thames River, a short distance west of the Warncliffe road, outside of the northwesterly boundary line of the City of London. Thence the roads runs in a southeasterly direction over private property and city streets, crossing over the Thames River in the City of London, to a point on Bathurst Street; thence easterly along Bathurst Street to the London & Port Stanley Railway, which at present terminates on Bathurst Street, immediately east of Richmond Street.

SCHEDULE "B."

| Name of Municipal Corporation: | Total amount of debentures to be issued by respective municipalities for deposit with the Commission under clause 2 (*b*). |
|---|---|
| Township of London | $630,389 |
| Township of Trafalgar | 578,921 |
| Township of Waterloo | 521,903 |
| Township of Blanshard | 402,909 |
| Township of Wilmot | 479,065 |
| Township of Downie | 418,735 |
| Township of South Easthope | 316,262 |
| Township of Toronto | 345,355 |
| Township of Nassagaweya | 343,147 |
| Township of Guelph | 361,025 |
| Township of Etobicoke | 401,335 |
| Township of North Easthope | 248,585 |
| Township of Biddulph | 142,166 |
| Township of Esquesing | 91,922 |
| Township of Puslinch | 70,300 |
| Township of Eramosa | 42,180 |
| Township of Nelson | 31,130 |
| Township of Ellice | 33,100 |
| Township of East Zorra | 39,000 |
| City of Toronto | 4,240,196 |
| City of London | 1,109,303 |
| City of Berlin | 774,040 |
| City of Guelph | 734,862 |
| City of Stratford | 651,735 |
| Town of Waterloo | 193,900 |
| Town of St. Mary's | 153,940 |
| Town of Milton | 65,000 |
| Village of Mimico | 111,200 |
| Village of New Toronto | 82,250 |
| Village of Port Credit | 54,050 |
| Village of New Hamburg | 66,250 |
| Total amount of bonds to be issued, mentioned in clause 3 | $13,734,155 |

SCHEDULE "C."

Districts, rateable property of which shall bear rate levied against the Corporation:

Name of Municipal Corporation:

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Made, passed and entered this day of 191 .

.....*Reeve (Mayor).*

.....*Clerk.*

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SCHEDULE "B."

By-law No. , of the Municipal Corporation of the Township of London, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of London and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Trafalgar, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of Trafalgar, and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Wilmot, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of Wilmot and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Downie, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Town-

ship of Downie and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Toronto, to authorize a cerain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of Toronto and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Nassagaweya, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of Nassagaweya and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Guelph, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of Guelph and other Municipal Corporations, for the construction equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Etobicoke, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of Etobicoke and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Biddulph, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of Biddulph and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Township of Esquesing, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Township of Esquesing and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

By-law No. , of the Municipal Corporation of the City of Toronto, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the City of Toronto and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the City of London, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the City of London and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the City of Berlin, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the City of Berlin and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the City of Guelph, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the City of Guelph and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the City of Stratford, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the City of Stratford and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Town of Waterloo, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Town of Waterloo and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Town of St. Mary's, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Town of

St. Mary's and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Town of Milton, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Town of Milton and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Village of Mimico, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Village of Mimico and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Village of New Toronto, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Village of New Toronto and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

By-law No. , of the Municipal Corporation of the Village of Port Credit, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Village of Port Credit and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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By-law No. , of the Municipal Corporation of the Village of New Hamburg, to authorize a certain agreement made between the Hydro-Electric Power Commission of Ontario and the Municipal Corporation of the Village of New Hamburg and other Municipal Corporations, for the construction, equipment and operation of an electric railway under *The Hydro-Electric Railway Act, 1914*, and amendments thereto.

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## Electric Power Company Agreement

An Act to confirm An Agreement between the Electric Power Company, Limited, and His Majesty the King, was passed at the previous Session of the Legislature.

An Act to confirm an Agreement between the Electric Power Company Limited, and His Majesty, the King.

*Assented to 27th April, 1916.*

Preamble. WHEREAS the Electric Power Company is the owner of or controls the shares of the capital stock of the corporations named in the first recital of the agreement hereinafter mentioned; and whereas the said Electric Power Company, Limited, and the said Companies so controlled by it are the owners of or control, among other properties, assets, rights, contracts, licenses, privileges and franchises, a number of water powers and water privileges in the central portion of Ontario; and whereas it is desirable in the public interest that such water powers and privileges, and the development, transmission and distribution of electrical power or energy therefrom should be owned or controlled as public utilities; and whereas His Majesty, the King, represented therein by the Honourable George Howard Ferguson, Minister of Lands, Forests and Mines, has entered into a contract with the Electric Power Company, a copy of which is set out in Schedule "A" to this Act, providing for the purchase of all the assets and undertakings of every kind and nature whatsoever, of the Electric Power Company, Limited, and the said twenty-two companies mentioned in Schedule "A" to the said contract; and whereas it is expedient that the said contract should be confirmed, and the Government of Ontario should be empowered to complete the said purchase, and to deal with, manage and dispose of the property acquired under the said contract, or any part thereof;

Therefore His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title. **1**. This Act may be cited as *The Central Ontario Power Act, 1916.*

Agreement between Crown and Electric Power Co. confirmed. **2**. The agreement, dated the 10th day of March, 1916, between the Electric Power Company, Limited, and His Majesty the King, represented therein by the Honourable George Howard Ferguson, Minister of Lands, Forests and Mines, which agreement is set out in Schedule "A" to this Act, is hereby confirmed and declared to be legal, valid and binding upon the parties thereto.

Property vested in Crown. **3**. All and every part of the property, assets, rights, contracts, privileges, licenses, franchises, undertakings and businesses dealt with or purporting to be dealt with, or agreed to be purchased or sold under the terms of the said contract set out in Schedule "A" are hereby vested in His Majesty the King, as representing the Province of Ontario, free from all liens, charges and encumbrances, save as provided in the said contract of purchase.

Crown. authorized to carry out contract.

**4.** The Lieutenant-Governor in Council is hereby authorized and empowered to do all and every act, matter and thing requisite or necessary, or deemed advisable to be done in order to complete and carry out the said contract, and all and every proviso and stipulation therein contained purporting to be made by or on behalf of His Majesty the King.

Issue of bonds for purchase money.

**5.**—(1) The Treasurer of Ontario is authorized to issue debentures of the Province of Ontario to the amount of $8,350,000, payable at the office of the Treasurer of Ontario, Toronto, Canada, or the agency of the Bank of Montreal in the City of New York, United States of America, or at the agency of the said bank in the City of London, England, at the holder's option in debentures of $1,000 each, bearing date the first day of March, 1916, and payable in gold coin on the first day of March, A.D. 1926, and with coupons to be attached for payment of interest at the rate of 4 per cent. per annum, payable in gold coin half-yearly at the office of the Treasurer of Ontario, Toronto, Canada, or at the agency of the Bank of Montreal in the City of New York, United States of America, or at the agency of the said bank in the City of London, England, at the option of the holder of the debentures, on the first day of March and the first day of September in each year until the principal falls due.

Registration of bonds.

(2) The Treasurer of Ontario is authorized at the request of the holders of the said debentures from time to time, or any of them, to have the same registered in the office of the Treasurer of Ontario.

Delivery of bonds to vendor company.

(3) The said debentures, upon their issue, shall be delivered to the Electric Power Company, Limited, in full discharge of the purchase money agreed to be paid by the Crown under the contract of Purchase, Schedule "A" to this Act, and neither His Majesty, or the Treasurer of Ontario, or any member of the Government of Ontario shall be bound to see to the application of the said debentures or of the proceeds thereof.

Bonds charged on Consolidated Revenue.

(4) The said debentures, and the interest thereon, shall be a charge upon, and shall be payable out of the Consolidated Revenue Fund of Ontario.

Order-in-Council vesting property in Commission, etc.

**6.** The Lieutenant-Governor in Council may at any time, or from time to time by Order-in-Council vest in any commission, municipal corporation, municipal commission, company, corporation, firm or individual, the ownership or control, or power of administration and management of all or any of the undertakings, properties, rights, contracts, licenses, privileges, franchises and businesses of all or any of the twenty-two companies named in the first recital in the said agreement to such extent, and in such manner and for such purposes, for such periods and on such terms and conditions and for such estate as such Order-in-Council may provide, and thereupon such commission, municipal corporation, municipal commission, company, corporation, firm or individual shall be clothed with and have, hold, exercise, enforce and enjoy all the rights, powers and privileges in respect of such undertakings,

properties, rights, contracts, licenses, privileges, franchises and businesses as shall be granted by such order-in-council and, subject to any limitations or restriction in such order-in-council, shall have, hold exercise, enforce and enjoy in respect of such undertakings, properties, rights, contracts, licenses, privileges, franchises and businesses all the rights, powers and privileges which the company, whose undertakings, properties, rights, contracts, licenses, privileges, franchises and businesses is or are vested as aforesaid had therein before the passing of the Act.

Management of property until disposed of.

**7.** Until the Lieutenant-Governor in Council shall in manner herein provided otherwise direct, the said undertakings, properties, rights, contracts, licenses, privileges, franchises and businesses, and every part thereof shall be under the management and control of some person nominated by the Lieutenant-Governor in Council who shall control, manage and administer the same for the benefit of His Majesty, either in the name of His Majesty, or in the name of the company now owning, controlling, or administering the same, and such person shall have, hold, exercise, enjoy and enforce all rights, powers and privileges in respect of the management, control or administration of the same as shall be granted or conferred by such order-in-council and, subject to any limitations and restrictions contained in such order-in-council, shall have, hold, enjoy, exercise and enforce all the rights, powers and privileges in respect of the property under his control, which such company or companies had before the passing of this Act.

Registration of Act.

**8.** A copy of this Act shall be deposited, copied and registered in the General Register of every Registry Office and Land Titles Office in which is registered or recorded the title to any lands affected by the terms of this Act, and every Registrar of Deeds, or Master of Titles as the case may be, shall, upon the request of the solicitors for the Crown, enter in the abstract index of each parcel or tract of land, the title to which is in any way affected by this Act, a note, entry or memorandum showing that the title thereto has been changed or affected by this Act, and referring to the date and registration number in the General Index where this Act has been recorded or registered as aforesaid.

SCHEDULE "A."

AGREEMENT made this tenth day of March, 1916,

Between:

THE ELECTRIC POWER COMPANY, LIMITED,

hereinafter called the vendor,

Of the first part,

and

HIS MAJESTY THE KING, herein represented by the Honourable George Howard Ferguson, Minister of Lands, Forests and Mines,

hereinafter called the purchaser,

Of the second part.

WHEREAS the vendor owns or controls the capital stock of the following companies carrying on business in the Province of Ontario, that is to say:

1. Auburn Power Company, Limited.
2. Central Ontario Power Company, Limited.
3. City Gas Company of Oshawa, Limited.
4. Cobourg Utilities Corporation, Limited.
5. Cobourg Water and Electric Company.
6. Cobourg Gas, Light and Water Company.
7. Eastern Power Company, Limited.
8. Light, Heat and Power Company of Lindsay.
9. Napanee Gas Company, Limited.
10. Napanee Water and Electric Company.
11. Nipissing Power Company, Limited.
12. Northumberland Pulp Company, Limited.
13. Oshawa Electric Light Company.
14. Otonabee Power Company, Limited.
15. North Bay Light, Heat and Power Company.
16. Peterborough Light and Power Company, Limited.
17. Peterborough Radial Railway Company.
18. Port Hope Electric Light and Power Company.
19. Seymour Power and Electric Company, Limited.
20. Sidney Electric Power Company, Limited.
21. Trenton Electric and Water Company, Limited.
22. Tweed Electric Light and Power Company, Limited.

And whereas the vendor has agreed to sell, and the purchaser has agreed to purchase, all the assets and undertakings of the said companies of every kind and nature, excepting such assets as are hereinafter specifically excepted, for the considerations hereinafter mentioned.

*Now this agreement witnesseth as follows:*

1. The vendor shall sell, and the purchaser shall purchase, as they existed on the first day of March, 1916, all the assets and undertakings of every kind and nature whatsoever of the vendor and of the said companies as follows:

1. All freehold and leasehold lands, tenements and hereditaments of the said company.

2. All plant, machinery, furniture, licenses, franchises, stock-in-trade, stores and all other chattels to which the said companies or any of them are or is entitled in connection with the businesses carried on by them respectively.

3. All pending contracts and engagements of the said companies or any of them in connection with any business so carried on.

4. All other property to which the said companies or any of them are or is entitled except, however, all cash and all bills and notes and all book and other debts due to the vendor or any of the said companies.

2. The consideration for the sale shall be the sum of Eight Million Three Hundred and Fifty Thousand dollars ($8,350,000), which shall be paid and satisfied by the issue and delivery to the vendor of Ontario Government Debentures bearing date March 1st, 1916, and payable March 1st, 1926, and bearing interest at the rate of four per cent., payable half-yearly in Toronto, New York and London.

3. The assets and undertakings are sold free of all encumbrances, but as regards leaseholds subject to all the rents and covenants contained in any leases or agreements for leases under which the same are held, all of which are known to the purchaser. The vendor undertakes to pay and discharge all existing debts and liabilities of the said Companies.

4. The purchaser agrees to assume all contracts and engagements of the Vendor or any of the said Companies and to indemnify them against any claims in respect thereof, which arise hereafter.

5. The purchaser accepts the title of the vendor and the said Companies to all the said premises; it being understood that the purchaser shall obtain at his own expense the requisite consents for the assignments of any lease-holds.

6. From and after the first day of March, 1916, the vendor and the said Companies shall carry on the respective businesses and maintain the same as going concerns, but they shall from the said date be deemed to be carrying on such businesses on behalf of the purchaser, and shall account and be entitled to be indemnified accordingly, and all income and receipts shall be adjusted and divided as of the first day of March, 1916.

Should any difference arise as to said adjustments these shall be referred to G. T. Clarkson, Esquire, of Toronto, as an Expert and not as an arbitrator, and his decision shall be final and binding on the parties.

7. Taxes and rents and insurance shall be adjusted as of the first day of March, 1916.

The purchase shall be completed before the first day of May, 1916.

In Witness whereof the parties have executed this agreement the day and year above mentioned.

(Sgd.) THE ELECTRIC POWER COMPANY, LIMITED,
STRACHAN JOHNSTON,
President.
(Sgd.) SAMUEL D. FOWLER,
Asst. Sec'y.
(Seal of Co.)

(Sgd.) G. H. FERGUSON,
Minister Lands, Forests and Mines.

Witness: (Sgd.) C. C. HELE.

## RIGHT-OF-WAY

### High Tension Lines

The work of the staff during the early part of the year was devoted to completing the purchase of the right-of-way for the second High Tension Transmission Line rom Niagara Falls to Dundas, and this work is practically completed.

Work was commenced in September on the purchase of lands necessary for the Chippawa-Queenston Development. Owing to the route of this work passing through lands in the Township of Stamford, which have been largely devoted to fruit growing and gardening, the holdings in the majority of cases being small and quite valuable, the work of acquiring these lands has necessarily been rather slow, but considerable progress has been made, and it is anticipated that the work will be completed before spring. In all it will be necessary to acquire about one hundred and twenty-five parcels of land owned by different parties for this right-of-way.

Plans have been completed and the work of purchasing the right-of-way commenced on the duplicate line from Dundas to Toronto. An additional purchasing agent, who will devote his time to this work during the coming winter, has been added to the staff, in order that delay in acquiring the needed lands in this case may be avoided.

The Commission now owns its own right-of-way through twenty-two townships and five urban municipalities, and in no case has it been necessary to resort to arbitration in order to acquire the lands desired. The Department has endeavoured to maintain a policy of uniform prices, and has met with comparatively little opposition from the owners of the lands sought to be purchased.

### Low Tension Lines

On account of the large mileage of Low Tension Lines constructed during the past season, the whole time of one member of the staff, and at times of two, has been required to secure the necessary tree trimming and pole rights for this work.

## CROSSINGS

The construction of high-tension and low-tension lines during the year has made it necessary to obtain the permission of various steam and electric railways, telegraph, telephone and power companies for crossings, to the extent of 300. In each case it was necessary to prepare applications and blue prints and forward the same to the different companies for approval and consent. Where consent is not given the matter is placed before the Board of Railway Commissioners for a ruling, all of which necessarily entails a considerable amount of work.

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## AGREEMENTS

During the fiscal year agreements for a supply of power have been made with the Cities of Sarnia and Kingston; the Towns of Dunnville and Forest; the Villages of Point Edward, Tara, Watford, Arthur, West Lorne, Milverton, Wyoming, Oil Springs, Rodney, Grand Valley and Omemee, and the Police Villages of Burgessville, Dashwood, Dublin, Highgate, Otterville, Springfield, St. Jacobs, Alton, and Zurich, and the Townships of York, Scarboro, Brant, Bentinck and Artemesia.

# SECTION II

## TRANSMISSION SYSTEM

### STEEL TOWER TRANSMISSION LINES

#### Surveys

##### DUNDAS-TORONTO

During the early part of 1916, a great deal of reconnaissance work was done in the district between Dundas and Toronto, in order that the most suitable location possible might be found for a second steel tower line.

On June 10th, 1916, a survey party commenced work at Dundas, and made a very complete survey from there to the Humber river. This location survey was completed late in October, and the party is now engaged in taking levels for a profile of the entire line.

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### STATION EQUIPMENT AND BUILDING DEPARTMENT

#### GENERAL

##### Station Construction

During the year just closed the following stations which were referred to in the last report as having been authorized have been completed and placed in service: Linden, Listowel, Milverton, Harriston, Palmerston, Ridgetown, Blenheim, Petrolia, Exeter, Eugenia, Owen Sound, Chatsworth, Chesley, Durham, Dundalk, Mount Forest, South Falls, Huntsville.

The construction of stations was authorized during the year at Tavistock, Hanover, York, Etobicoke, West Lorne, Kilsyth, Orangeville, Port McNicoll (C.P.R.), Forest.

Changes for addition of transformers or switching equipment or both have been made, or authorized, for several of the transformer and distributing stations, these being necessitated by increase of load on the station in the majority of cases and by additional feeders being required in others. These alterations and additions are described later in this report.

The progress on design and construction of stations has not been as satisfactory as in past years, owing to conditions arising from war. At the time of writing, promises of delivery of equipment of six to eight months (where formerly two to three months were promised) are the rule. Furthermore, the high cost of materials and equipment is unprecedented. At the present time, contracts are placed for certain pieces of apparatus at double the prices that we were able to purchase same for two or three years ago.

##### Administration Building

The Administration Building described as being constructed in previous report was completed and the transfer of offices from the Continental Life Building was effected as conditions in the new building would permit, the executive offices moving in on April 1st.

It was thought that the Administration Building would provide sufficient quarters for several years. When the layout was prepared, each department was provided with at least three times the floor space which it had at that time in the Continental Life Building. However, the phenomenal growth of the Commission and the addition of the Central Ontario System has necessitated increasing the staff to such an extent that some of the departments are now utilizing all the space available.

A garage, with accommodation for three motor cars, was constructed on the property to the rear of the building to house motor cars for office use.

### Toronto Storehouse Extension

The Stores Department, Laboratory and garage have all outgrown their quarters, and it was decided to proceed with the construction of an addition to the Toronto Storehouse and Laboratory. The extension is being made 132 feet deep, the full length of the present building. Reinforced concrete, flat slab construction, with brick curtain walls is being used. The extension will provide for a garage approximately 108 feet long by 66 feet wide, providing accommodation for about 24 motor cars. A machine and repair shop, the same dimensions as the garage, immediately over same, will be provided. The top story of this portion of the building will be used as a carpenter and paint shop. The interior portion of the building, 66 feet by 108 feet with basement and three floors, will be used exclusively for stores.

The entire basement, first and second floors of the present building will be remodelled and converted into laboratory accommodation.

Tenders were called for the construction of the building extension and the contract awarded to Messrs. Witchall & Sons, in the early fall. At the time of writing, excavation has been completed and the majority of the concrete footings have been poured.

### Central Ontario System

When the Electric Power Company's interests were acquired, all drawings and designs available were transferred to this Department for use in connection with any extensions which might be decided upon.

### Niagara Development

Several conferences were held with representatives of the electrical manufacturing companies with regard to the special features of the plant. Preliminary specifications for the main generators and transformers were issued to the different manufacturers and at the present time they are engaged in preparing designs which will enable them to more intelligently prepare tenders when our detailed specifications are issued. Conferences have also been held regarding special mechanical features of the generating station.

### Public Utilities Commission of Peterboro

Preliminary designs were prepared for a proposed transformer station for the municipality. However, it was decided that this work be held up for the time being, at least.

Main Entrance Hall, Administration Building

Interior of Board Room, Administration Building

### Cobden Municipal Generating Station

Plans and specifications were prepared for the electrical equipment for a generating station for the village of Cobden. The contract for the generator and exciter was placed with the Canadian General Electric Company, who also furnished the 3-k.w. station service transformer, and for the switchboard and connecting material with the Northern Electric Company.

The generator is rated at 100 kv-a., 2,300-volt, 3-phase, 60-cycle, 720 r.p.m., and is direct connected to a turbine. The belt-driven exciter is of 5-k.w. capacity at 125 volts.

The switchboard consists of one panel with automatic oil switch and full compliment of meters, including one Westinghouse type "RO" watthour meter for measuring the output of the plant.

The contracts were awarded in May, and it is expected that equipment will be placed in operation in a short time.

## NIAGARA SYSTEM

## NIAGARA FALLS TRANSFORMER STATION

### Building Extension

In order to provide improved facilities for handling equipment such as has been contracted for for this station, an extension to the erection room was authorized. This extension will also provide space for the equipment required for supplying 12,000 volt power to local municipalities and office space for different departments having duties in or around the station. This new addition will be approximately 30 feet wide by 84 feet long by 33 feet high. The work is being done by Messrs. Wells and Gray, the contracting firm which built the recent extension.

### 12,000 Volt Feeders

The two feeders, each composed of two 300,000 C.M. 3-conductor, lead-covered and steel-tape armored cables, referred to in the last report, were installed during the past summer. These connect our station with that of the Ontario Power Company. They will be utilized as spare feeders, and are designated No. 10 and No. 11.

For the purpose of receiving power from the Canadian Niagara Power Company a cable system consisting of eight 350,000 C.M. 3-conductor, lead-covered and steel-tape armored cables will be provided. This line will run on a private right of way from our station in a south-easterly direction to the brow of the hill overlooking the river near Falls View Station of the Michigan Central Railway, thence across this railway right of way and through the Queen Victoria Niagara Falls Park to a manhole at the south-western corner of the Generating Station of the Canadian Niagara Power Company. The cables for this system will be supplied and installed by the Standard Underground Cable Company. Two cables will comprise a feeder, and each feeder will be capable of delivering 12,500 horse power. The cables will be laid directly in the earth with creosoted plank above to prevent mechanical injury. Where cables cross highways they will be drawn into cast-iron soil pipe arranged with ventilators. It is expected to have at least one of these feeders in service early in December, 1916, installation work having already been started.

### Additional Electrical Equipment

No. 7 bank of 110,000-volt transformers, consisting of three 3,500-kv-a. units, was installed and made ready for service in September. This equipment is similar to that installed for No. 5 bank and No. 6 bank, and was mentioned in previous report.

No. 3 bank of 45,700-volt transformers, consisting of three 3,500-kv-a. units, was contracted for with the Canadian General Electric Company. Two of these have been shipped, and work is progressing on the installation. The Canadian Westinghouse Company are supplying the switching equipment for this bank, and installation work is proceeding. This equipment is similar to that previously installed for banks No. 1 and No. 2.

Owing to additional capacity being required to meet the increasing loads, tenders were asked for and the Canadian Westinghouse Company were awarded the contract for three 7,500-kv-a. 12,000/63,500-volt transformers, forming No. 8 bank of transformers on the 110,000-volt bus, together with the necessary 12,000-volt and 110,000-volt switching equipment. These were the largest size units that could be placed in the space available in the building. When this bank is installed, the total capacity in this station in 110,000-volt transformers will be 96,000-kv-a. with one spare 3,500-kv-a. unit extra. It is expected that this No. 8 bank will be completed early in 1917.

### Switching Equipment

In addition to the switching equipment above referred to as being supplied by the Canadian Westinghouse Company, this company will also supply the 12,000-volt and other equipment required for handling the four feeders from the Canadian Niagara Power Company, and the two spare armored cable feeders from the Ontario Power Company.

### Bus and Switch Cell Structures

The contract for the construction of the necessary concrete cell work for the 12,000-volt oil switches and bus bars on above equipment was awarded to Messrs. Wells and Gray and this work is being proceeded with.

### Water System

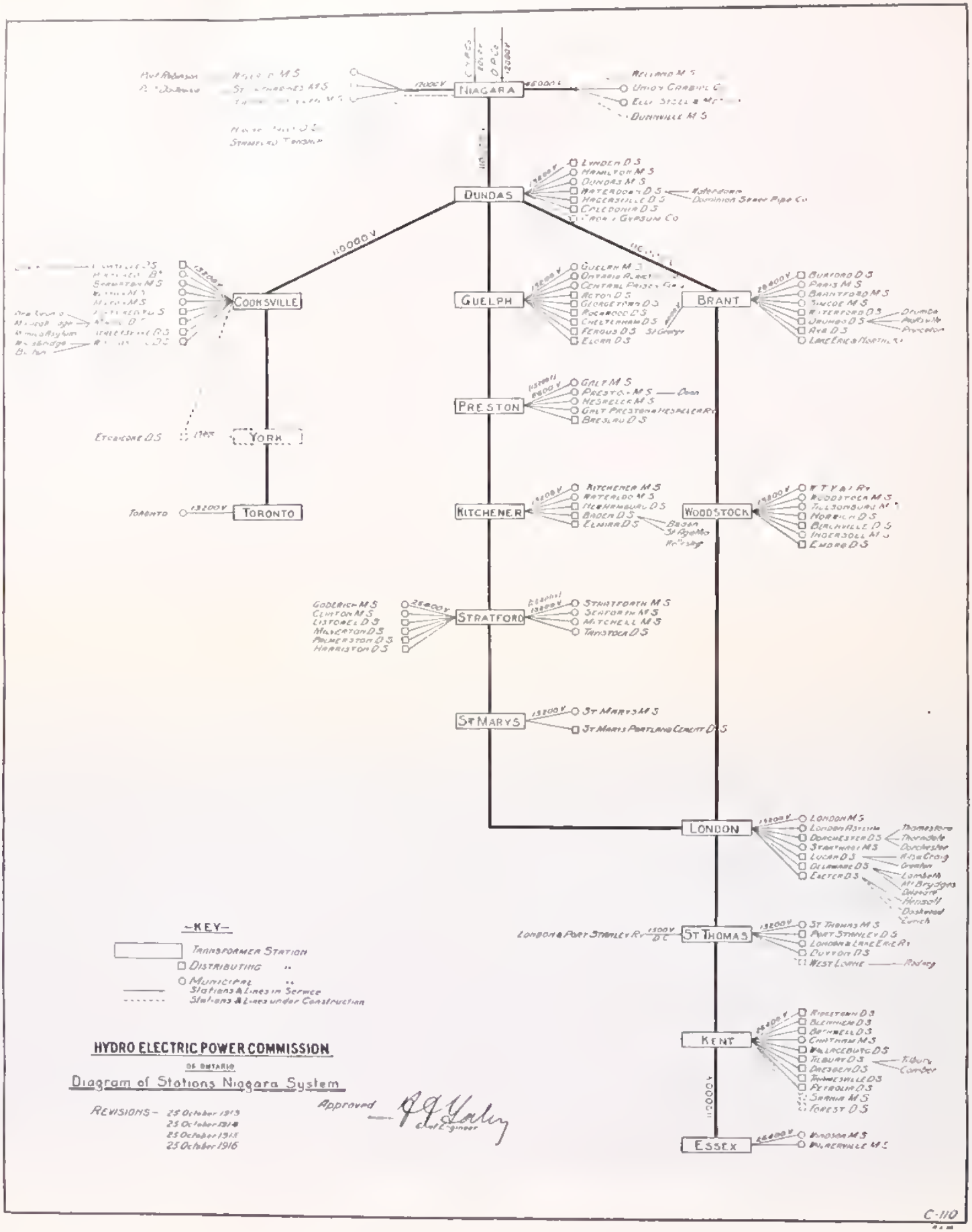
A contract was awarded to Messrs. Wells and Gray for the construction of a third sprinkling tank to take care of the increased amount of cooling water necessitated by the increase in the number of transformers in this station. The work on this tank has been started, and it is expected will be completed before the severe winter weather commences.

Additional pumping capacity was deemed advisable and an order was placed with the Storey Pump and Equipment Company for an additional (No. 5) pump, same to have capacity of 600 Imperial gallons per minute.

A 6-inch main running along Dixon St. to connect to the city water mains for emergency supply of water was installed by the Operating Department.

### Protection of Service

Further studies are being made of possible methods of protecting and bettering the service. The incoming feeders from the Canadian Niagara Power Company




**HYDRO ELECTRIC POWER COMMISSION**
OF ONTARIO

Diagram of Stations Niagara System

REVISIONS – 25 October 1913
25 October 1914
25 October 1915
25 October 1916

Approved — P J Yalden
Chief Engineer

C-110

will be arranged so that at a later date we will be able to operate with two independent busses, that is, with duplicate feeder and transformer switches. The installation of power limiting reactors is also being investigated.

### Niagara Falls Distributing Station

It was decided to designate equipment required for supplying 12,000-volt power locally as "Distributing Station," although it is housed in the same building with Transforming Equipment. It is desirable for accounting purposes to keep them separate.

Equipment, consisting of three 100-kv-a. Westinghouse transformers with oil switch and meters, was temporarily installed to supply the Niagara Falls waterworks with 2,200-volt power for pumping purposes. Also work is under way on outgoing feeder equipment for supplying 12,000-volt power to the City of Niagara Falls, also to the Township of Stamford, by the date when their present contract expires. The permanent equipment for this service will be placed in the building extension referred to above.

### Welland Municipal Station

Three Canadian Westinghouse Company's 150-kv-a., 13,200/2,300-volt, single-phase transformers were purchased from the St. Thomas Light, Heat and Power Commission. These transformers were received at Welland early in October. The switching equipment for these transformers was purchased and installed by the Welland Hydro-Electric Power Commission and the transformer bank was placed in service on October 30th.

### Port Robinson Distributing Station

The Standard Steel Construction Company at Port Robinson have been receiving 12,000-volt power from the Commission at their sub-station, which contained three 60-kv-a., 13,200/220-volt single-phase transformers and switching equipment for two incoming 12,000-volt lines, for the above transformers and for the 220-volt feeders to their steel plant. This station and equipment was purchased by the Commission.

An additional bank of transformers and two 2,300-volt feeders have since been installed in this station. These transformers were purchased from the Dundas Hydro-Electric System, and consist of three 75-kv-a., 13,200/2,300-volt, 25-cycle, single-phase, self-cooled transformers. The new switching equipment was purchased from the Canadian General Electric Company. One feeder is used for feeding 2,300-volt, 3-phase power to the Standard Steel Construction Company and the other feeder for 2,300-volt, 3-phase local distribution service for the Welland Hydro-Electric Commission.

One of the 12,000-volt incoming lines has been disconnected from the station and arrangements have been made to tie these two lines together outside the station by means of a horn gap 3-pole disconnecting switch in each line.

This station was placed in service on October 13th.

### Niagara-on-the-Lake Municipal Station

The corporation of the town of Niagara-on-the-Lake, built under the supervision of the Commission's construction men a new galvanized iron building for housing equipment necessary to enable them to receive power at 12,000 volts from

the Commission. This equipment was removed by the Commission's staff from the then existing power and pump house and erected in the new station, together with the connecting material and station entrances which had to be purchased. This station was placed in service about August 10th.

## TORONTO TRANSFORMER STATION

### Erection Room

The transformer erection room in this station is being enlarged to accommodate 5,000-kv-a. transformers, and a pit is being made in order to obtain necessary headroom. A new transformer truck is also being ordered.

### Water Main

A 6-inch connection to the city of Toronto water main on Exhibition Road was made to the water system in this station in order to assure water supply for cooling the transformers during progress of work by the Toronto Harbor Commission, which is expected to interfere with the intake to the present pump house on the Lake Shore.

### Drain

A connection is being made between the storm sewer on Strachan Avenue and the Toronto Hydro-Electric System's cable duct line manhole, which is a few feet north of the station. A tap will be taken off this connection and connected to the transformer water-cooling system and also to the storehouse.

### No. 5 Transformer Bank

On December 16th, a contract was placed with the Canadian General Electric Company for three 5,000-kv-a., 63,500/13,200 volts, 25-cycle, oil-insulated, water-cooled, single-phase transformers, together with the 110,000-volt and 13,200-volt switching equipment for connecting this bank of transformers to the existing busses. The layout of the switching equipment is similar to that for the existing 2,500-kv-a. transformers, except that the 13,200-volt equipment was of heavier carrying capacity. These 5,000-kv-a. units were the largest that could be placed in the space available in the building and will be installed during the winter.

### Changes to Transformer Banks No. 3 and No. 4

On August 15th a contract was placed with the Canadian General Electric Company for six 5,000-kv-a., 63,500/13,200-volt, 25-cycle, oil-insulated, water-cooled, single-phase transformers. Three of these are promised for shipment in August, 1917, and the other three in October, 1917. The contract will be placed within a short time for the necessary 13,200-volt switching equipment and connecting material to change or replace the existing equipment to control the additional transformer capacity. The above transformers will be used to replace the existing 2,500-kv-a. transformers on bank No. 3 and 4. This will make a total station capacity of 60,000-kv-a. with one 2,500-kv-a. spare unit extra.

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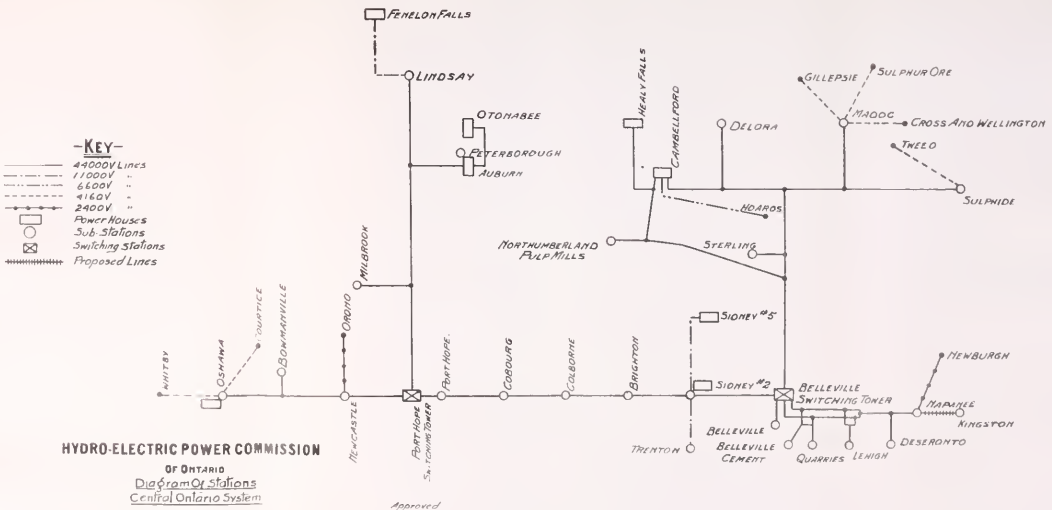


**HYDRO-ELECTRIC POWER COMMISSION**

**OF ONTARIO**

Diagram Of Stations
Central Ontario System

23 October, 1916

Approved

CHIEF ENGINEER

C-154.
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## LONDON TRANSFORMER STATION

### London Utilities Commission

**Office Building**

At the request of the Public Utilities Commission, some assistance was given them in connection with an office building which is proposed.

Copies of specifications for different classes of work as used in connection with the construction of the Administration Buildings were given them.

**Car Barn Sub-Station**

Plans for a sub-station room in the London Railway Commission's car barns were prepared and submitted to the Public Utilities Commission. This room is 15 feet 6 inches by 17 feet 0 inches, and is designed to accommodate three 200-kv-a. single-phase, self-cooled 13,200/2,300-volt, 25-cycle, Moloney Electric Company's transformers, with necessary switching equipment and lightning arresters. All this electrical equipment was supplied and installed by the Utilities Commission.

**Horton Street Station Railway Equipment**

Engineering assistance was given to the Utilities Commission in connection with repairs on rotary converters and also in connection with the purchase of two 1,000-ampere S.P.D.T. and one 1,000-ampere S.P.S.T. 1,500-volt disconnecting switches for installing in the 1,500-volt D.C. feeders to provide a more flexible arrangement. These were purchased from the Canadian Westinghouse Company, and installed by the Utilities Commission at the end of July.

The Utilities Commission authorized the purchase from the Canadian General Electric Company of two 1,500-volt electrolytic arresters to be directly connected across the commutators of the 500-k.w., 1,500-volt rotary converters. The order for these was placed in September.

### London Railway Commission

The car barns referred to in the last report were completed under the supervision of this Commission.

### Exeter Distributing Station

The contractor, Mr. P. Bawden, finished the building early in December. The contract for the electrical equipment, consisting of three 100-kv-a., 13,200/2,300-volt, single-phase transformers, with switching equipment for same and for one 210-kv-a., 4,000-volt feeder was awarded to the Canadian General Electric Company. The installation was finished and the station was placed in service May 4th. In August an order was placed with the Canadian General Electric Company for one 13,200-volt electrolytic lightning arrester for this station. The order for an additional feeder panel and equipment controlling a 4,000-volt feeder to Hensall was awarded to the Canadian General Electric Company on July 5th, and will be installed this fall.

### Lucan Distributing Station—Granton Feeder

The installation of a 4,000-volt feeder equipment in Lucan Distributing Station to supply the municipality of Granton was authorized, and a panel and equipment was taken from stock equipment previously ordered from the Canadian Westinghouse Company. This panel was installed and put into operation on July 27th.

## GUELPH TRANSFORMER STATION

### Board of Light and Heat Commissioners of Guelph

Engineering assistance was given to the Board of Light and Heat Commissioners of Guelph in connection with the purchase and testing of one 550-kv-a., 3-phase, 25-cycle, O.I.S.C., 13,200/2,300/575-volt transformer. Contract was placed with the Canadian General Electric Company, Limited, for this unit in March, and tests at the factory were witnessed and reported in August.

Prices were also obtained on 50-kv-a. and 100-kv-a., 3-phase automatic voltage regulators for the above Board.

### Central Prison Farm Sub-Station

It was decided to replace the 13,200-volt condenser-type lightning arrester in this station by an electrolytic type of arrester and a Canadian Westinghouse 13,200-volt, 3-phase arrester was purchased. This will be installed and put into service by the Commission's maintenance department.

## PRESTON TRANSFORMER STATION

### 1916 Extension

Plans and specifications have been prepared and tenders called for the construction of a 33 feet by 56 feet extension to the north end of the present building for the accommodation of an additional bank of three 750-kv-a., 63,500/13,200-volt transformers with necessary switching equipment, this additional bank of transformers to be comprised of the former spare unit and two 750-kv-a. units to be transferred from Stratford Transformer Station.

The secondary voltage of this station will be changed from the present 6,600 volts to 13,200 volts, and all oil switches will be made electrically operated requiring a rearrangement of apparatus, plans for which are now being prepared. This change will necessitate changing the voltage of all stations fed from this station, including Preston, Hespeler, Galt and Breslau Stations, and the Galt, Preston & Hespeler Railway feeder to 13,200 volts, for which the necessary changes are now being considered.

### Galt Waterworks Commission

In order to provide a more flexible arrangement and to obtain greater power factor corrective capacity from the motors, it was decided by the Galt Waterworks Commission to divide the motor-driven pumping unit in the waterworks station into two separate units, by adding another 250-kv-a. synchronous motor and connecting it to the south 800-gallon pump, leaving the 250-kv-a. motor first supplied on the north pump. Accordingly the Hydro-Electric Power Commission of Ontario were requested to prepare specifications and obtain tenders on the new motor and switching equipment required.

Tenders were obtained and submitted to the Waterworks Commission and the contract for one 250-kv-a., 3-phase, 25-cycle, 750 r.p.m. synchronous motor with exciter and control panel and necessary wiring material was placed with the Canadian Westinghouse Company, Limited, in February.

The manufacture of this equipment was followed up in the factory by frequent inspections and witness tests were made when the motor was completed. This motor and other equipment was placed in operation in October.

## KITCHENER TRANSFORMER STATION

No work was done in this station during the year by this Department. The erection of the sheet steel storehouse mentioned in last report was completed.

### Baden Distributing Station Extension

**Transformers**

It has been arranged to increase the transformer capacity of this station by removing the present bank of 75-kv-a. transformers and replacing them by a bank of 150-kv-a. capacity, purchased from the municipality of Seaforth.

**Wellesley Feeder**

An additional 4,000-volt feeder equipment, to supply the village of Wellesley, has been bought from Canadian Westinghouse Company and installed in this station by the construction staff of the S. E. & B. Department. In service on October 23rd.

## STRATFORD TRANSFORMER STATION

Plans are under consideration for the removal of the 750-kv-a. transformers in this station to Preston Transformer Station and for a rearrangement of the outgoing feeders, making all feeders out of this station operate at 26,400 volts. This will involve changes to the municipal stations at Stratford, Seaforth and Mitchell, which are noted below.

### Stratford Municipal Station

Owing to arrangements which have been made to supply power at 26,400 volts instead of 13,200 volts to the Stratford Utilities Commission, it was decided to construct a new sub-station.

At the request of the Utilities Commission, specifications and drawings have been prepared by the Commission covering a new two-storey building with basement to form an extension measuring 53 feet 9 inches by 29 feet 5 inches by 42 feet 9 inches high, to their existing station. This new building will accommodate four 750-kv-a., 26,400/2,300-volt, 3-phase, 25-cycle O.I.W.C. transformers, together with switching equipment for same and for two incoming 26,400-volt, 3-phase lines and the low-tension circuits.

The 26,400-volt switching equipment will be located on the second floor, the transformers and low-tension switching equipment, street lighting transformers, etc., on the main floor, while the potential regulator, water pumps, etc., will be located in the basement.

Drawings and specifications have also been made up and tenders requested for the switching equipment to control the two incoming lines, three 750-kv-a., 3-phase transformers, three 2,300-volt commercial lighting feeders, one 100-kv-a. potential regulator, one street lighting bus and one station service bank of transformers with 110 and 220-volt station feeders. The present four power and lighting feeder panels together with the eight constant current street lighting transformers and their panels will be moved to the new station. The present 110-k.w., 2,200-volt, 3-phase synchronous motor which is now driving a 220-volt D.C. generator will be moved to the basement of the new station, and the control panel will be placed in the main switchboard on the main floor. This motor will then be used for power factor correction.

### Seaforth Municipal Station

This station which is now operating at 13,200 volts high tension with three 150-kv-a., 13,200/2,200-volt, single-phase Canadian Crocker Wheeler Company's transformers will be rearranged to be fed from two 26,400-volt lines tied together through horn gap disconnecting switch outside the station. Three 150-kv-a. 26,400/2,300-volt transformers have been purchased from the Canadian General Electric Company and should be ready for shipment in November. The necessary switching equipment required on account of the change to 26,400 volts has been ordered.

As soon as the existing 13,200-volt transformers are released, they will be transferred to the Baden Distributing Station, and the remaining 13,200-volt equipment will be used elsewhere on the System.

### Mitchell Municipal Station

Owing to the arrangements to transmit power to Mitchell at 26,400 volts instead of 13,200 volts, three 75-kv-a., 26,400/575-volt, single-phase transformers have been purchased from the Canadian General Electric Company, and the switching equipment required has been purchased. At present the 13,200-volt equipment is located in a building, part of which is used for other purposes. The corporation of Mitchell are considering the advisability of building a new and separate brick station for housing the 26,400-volt equipment and transformers.

As soon as the new 26,400-volt equipment and transformers are installed and placed in service, the existing 13,200-volt equipment and transformers will be removed for use elsewhere on the System.

### Tavistock Distributing Station

For the purpose of distributing power to Tavistock, a standard type "H" station layout equipment is being installed in a part of the existing pump house at Tavistock. On August 30th three 75-kv-a., 26,400/2,300-volt, single-phase, Canadian Crocker Wheeler Company's transformers were purchased for this station and are due for shipment in November. The 2,300-volt feeder panel, the 26,400-volt fuses and the insulators and connecting materials were supplied by the Canadian Westinghouse Company. Standard outdoor horn gap switch and a choke coil made up in the Commission's machine shop are being installed on the incoming line.

In order to give service from the station as soon as possible it was arranged to transmit power to same at 13,200 volts temporarily and install therein three 25-kv-a. 13,200/2,300-volt, single-phase Canadian Moloney Electric transformers which were in stock. This work is now under construction, and it is expected that the station will be placed in service at 13,200 volts early in November.

### Listowel Distributing Station

The equipment for this station, as listed in last year's report, was furnished by the Canadian Westinghouse Company. A 26,400-volt ungrounded neutral aluminum cell lightning arrester was ordered from the Canadian General Electric Company. The Canadian Westinghouse Company were notified May 5th, to make shipment of the 100-kv-a. transformers and switching equipment, and same was installed and power furnished on May 27th. The lightning arrester referred to above was installed and put into service June 3rd.

### Milverton Distributing Station

The type "H" building referred to in last annual report was completed in the early part of January. The contract for the three 75-kv-a., 26,400/4,000-volt transformers and switching equipment as mentioned in last report was awarded to the Canadian General Electric Company in January. The work of installation was completed about the middle of May. The station was placed in service on May 22nd.

### Harriston Distributing Station

The contract for the type "H" station building referred to in last year's report was awarded to Mr. W. N. Hutchison in November, and the building was completed first week of January. The contract for the three 75-kv-a., 26,400/4,000-volt transformers and switching equipment was awarded to the Canadian General Electric Company. The installation of this equipment was finished about the middle of June, and the apparatus tested out and put into service June 30th.

This station also accommodates the 12-k.w. constant current street lighting transformer and panel belonging to the municipality, which equipment was transferred from the old station to the new distributing station by the Commission's construction staff.

### Palmerston Distributing Station

The type "H" building referred to in last year's report was finished the latter part of January. Contract for the three 75-kv-a., 26,400/4,000-volt transformers and switching equipment was awarded to the Canadian General Electric Company, and installation was completed the latter part of May. The station was tested out and placed in service on June 6th.

There is also installed in this station a 12-k.w. constant current transformer and panel, the property of the municipality.

### Municipality of Palmerston

At the request of the municipality tenders were obtained on a street lighting transformer and panel for same. The orders were placed in February with the Canadian General Electric Company for the panel, and with A. H. Winter Joyner, Limited, for one 12-k.w., 6.6-ampere, 2,300-volt Adams Bagnall constant current transformer. The equipment was installed by the Commission's construction staff.

## ST. MARY'S TRANSFORMER STATION

The corrugated sheet steel shed referred to in last report was completed. No other work was done at this station.

### St. Mary's Portland Cement Company Distributing Station Extension

Owing to the increased load at this station it was considered advisable to increase the transformer capacity and it was decided to have three 150-kv-a., 13,200/550-volt Packard Electric Company's transformers now in use in the Stratford Municipal Station transferred to this station, when released from Stratford.

Plans were prepared showing necessary changes in the original arrangement, and additions for this second transformer bank and the necessary additional

apparatus was ordered from the Canadian Westinghouse Company, and will be installed by the Commission's Construction Department.

The 550-volt leads from this second bank of transformers will run to a new feeder panel to be supplied by the St. Mary's Portland Cement Company.

## WOODSTOCK TRANSFORMER STATION

The corrugated sheet steel shed referred to in last report was completed. Plans are being considered for extending this station to accommodate equipment for a second 110,000-volt line.

## ST. THOMAS TRANSFORMER STATION

### No. 2 Bank of Transformers

A contract was placed with the Canadian Westinghouse Company in April for the 110,000-volt and 13,200-volt switching and metering equipment for the second bank of three 750-kv-a., 63,500/13,200-volt transformers. This second bank comprises two transformers from Guelph Transformer Station, which were delivered and installed in this station by the Maintenance Department in March, and the original spare transformer in this station.

The installation work was completed by the Commission's Construction Department and the second bank was placed in service July 30th.

### Additional Feeder Equipment

A contract was placed with the Canadian Westinghouse Company, April 6th for complete switching and metering equipment for two additional 13,200-volt feeders, including lightning arresters. One of these feeders will be in the old station and one in the new extension. The switchboard panel in the old station will line up as far as possible with the present Canadian General Electric switchboard. The installation work will be done by the Commission's Construction Department when material is received.

### Railway Supply Eqipment

Considerable time has been spent in obtaining data and studying the operation of 1,500-volt D.C. rotary converters on railway work, and this is being continued.

In order to better sectionalize the feeder system, three 1,000-ampere S.P.D.T. and one 1,000-ampere S.P.S.T. 1,500-volt disconnecting switches were purchased from the Canadian Westinghouse Company, Limited, and installed in 1,500-volt feeders. This work was completed early in August.

Two electrolytic lightning arresters were purchased in August from the Canadian General Electric Company, and it is the intention to connect these directly across the commutators of the two 500-kw. rotary converters in this station to give increased protection to the windings.

## St. Thomas Municipal Station

### Building

At the request of the St. Thomas Hydro-Electric Commission, plans and specifications were prepared for the construction of a combined office and sub-station. Tenders were called for and submitted to the local Commission, who awarded the contract to Mr. A. E. Ponsford, of St. Thomas, in February.

The building, which is 40 feet by 80 feet, is located on the south-west corner of St. Catharine and Gas Streets. It is built of red pressed brick with buff-colored Indiana limestone trim. Steel window sash, reinforced concrete floors, and steel beam construction were used throughout, making an entirely fireproof building. The front part of the building is partitioned off for offices on all floors, the space occupied being 37 feet wide by 20 feet 1 inch deep inside. The building will be completed early in December.

**Electrical Equipment**

The electrical equipment is located at the rear of the offices, occupying a space of approximately 37 feet by 55 feet 6 inches on each floor. The 13,200-volt apparatus is located on the second floor, the main transformers, constant current transformers, rotary convertor and switchboard on the main floor, and the cables and service transformers in the basement, which will also be used for storage purposes.

The station is fed by two 13,200-volt incoming lines and has one 13,200-volt outgoing feeder with provision for a second outgoing feeder, all these being equipped with Canadian Westinghouse electrolytic lightning arresters. These feeders are connected through choke coils, disconnecting switches and oil switches to a sectionalized bus, and from this bus leads are taken through oil-switches to three 100-kv-a. 13,200/375-volt, single-phase Canadian Westinghouse transformers and two new 750-kv-a., 13,200/2,300-volt, three-phase, Canadian General Electric transformers. Provision was also made for a future three-phase transformer. From the 100-kv-a. transformers the 375-volt leads are taken in conduit to a 200-k.w., 600-volt D.C. rotary convertor, which feeds the local street railway circuit.

From the 750-kv-a. transformer, leads are carried in conduit to the 2,300-volt busses back to the main switchboard on the main floor from which the following feeders are taken out in conduits underground, three commercial lighting, one 2,300-volt power, two 550-volt power feeders and five series street lighting feeders with provision for several future feeders. The 550-volt power is obtained from three 30-kv-a., 2,300/550-volt, single-phase Packard Electric Company's transformers installed in the basement. Three 28-k w. Adams Bagnall, and two 22-k w. Canadian Westinghouse constant current transformers are used for the series lighting feeders. The main 2,300-volt busses are sectionalized to allow for the future installation of a regulator if found necessary.

Three 25-kv-a., 2,300/220/110-volt transformers located in the basement and connected to the 2,300-volt busses through expulsion fuses supply light, heat and power for the station and office.

As much as possible of the electrical equipment from the old station was used in the new station, but in addition to the new 750-kv-a. transformers and the 25-kv-a. service transformers mentioned above, it was found necessary to purchase a number of new switchboard panels, meters and relays from the Canadian Westinghouse Company.

The equipment in the new station is being installed by the Commission's construction staff in conjunction with the local Commission's staff in such a way that no serious interruption of service is necessary. One 750-kv-a. transformer was installed in the old station and put in service temporarily on September 20th, releasing one old bank of three 150-kv-a. single-phase transformers which were disposed of to the Welland Hydro-Electric Commission for use in the Welland Municipal Station. It is expected that the installation will be entirely completed

early next year, the progress not being as rapid as expected, owing to slow deliveries of material and the necessity for maintaining service during the transfer to the new building.

### West Lorne Distributing Station

A type "E-2" station was authorized for West Lorne to supply power to West Lorne and to Rodney. The contract was awarded for the building to Messrs. Horton Bros., of St. Thomas, on October 14th. This station is to contain three 75-kv-a., 13,200/2,300-volt transformers with two outgoing 4,000-volt feeders, each of 100-kv-a. capacity, one to supply West Lorne and the other Rodney. The contract for the electrical apparatus was given to the Canadian Westinghouse Company. It is expected that this station will be placed in operation before January 1st, 1917.

## COOKSVILLE TRANSFORMER STATION

The corrugated sheet steel shed referred to in previous report was erected. Plans are being considered extending this station to accommodate equipment for a second 110,000-volt line.

### Mimico Distributing Station

Owing to increasing demand for power, it was found necessary to put in additional transformer capacity in the Mimico Distributing Station. As the plans under consideration for this district contemplated the erection of a new larger station, it was decided to install the additional transformers required in a temporary extension to the existing building.

Three 300-kv-a., 13,200/2,300-volt, 25-cycle, single-phase transformers of Johnson and Phillips make were purchased from Chapman and Walker (in liquidation) for this station, but, owing to the necessity for overhauling them, they could not be made ready for service in time, and arrangements were finally made to purchase from the corporation of Brampton three 150-kv-a., 13,200/2,200-volt Crocker Wheeler Company's transformers. The temporary building extension was erected and the 150-kv-a. transformers installed and the necessary wiring changes made by the Commission's construction staff. These additional transformers were placed in service on October 15th.

### Etobicoke Distributing Station

This station will be constructed in New Toronto village and will be used for supplying power to Mimico, New Toronto and the Provincial Institutions in the neighborhood. Tenders have been called for the supply of two 1,500-kv-a., 3-phase transformers for this station. This station will be supplied from Cooksville Transformer Station at 13,200 volts, but is so designed that it can later be fed from the proposed York Transformer Station at 26,400 volts.

In a former report "Etobicoke Distributing Station" was mentioned. This, however, referred to a proposed station in the vicinity of Mimico Asylum, which was never constructed, and the switching equipment ordered for same was used elsewhere, partly at Port Robinson Distributing Station and partly at Paris Municipal Station (McFarlane Engineering Company).

Pending construction of the above new station, a temporary station will be erected to take care of the immediate requirements for a supply of power to Brown's Copper and Brass Rolling Mills at New Toronto. It is proposed to use here the three 300-kv-a. Johnson and Phillips transformers referred to above under Mimico Distributing Station.

### Brampton Municipal Station

At the request of the corporation of Brampton, tenders on three 300-kv-a., 13,200/2,300/575-volt transformers were obtained and submitted to the Brampton Commission. The contract for these was awarded to the Moloney Electric Company of Canada. Witness tests on these were made at the manufacturer's factory and the results reported to Brampton. These transformers were installed in the latter part of August.

The 150-kv-a. transformers which were replaced by the 300-kv-a. units, were purchased by the Commission for use at Mimico Distributing Station.

### Corporation of Weston

The Commission have purchased for the Weston Hydro-Electric Commission three 150-kv-a. transformers 13,200/2,200/550-volt from the Stratford Utilities Commission to take care of the load of Canada Cycle and Motor Works at Weston.

The transformers will be installed in the company's own building by the Commission's construction staff.

The Commission will also take care of the necessary changes in the Weston Municipal Station to take care of this additional load. This will consist of the purchase and installation of one 13,200-volt oil-switch with panel and necessary metering equipment. It is expected that this equipment will be ready in December.

## BRANT TRANSFORMER STATION

No work was undertaken in the Brant Transformer Station during the year, but plans are being considered for extending this station to accommodate equipment for a second 110,000-volt line.

### Paris Municipal Station (McFarlane Engineering Company)

With authority from the corporation of the town of Paris, the Commission purchased electrical equipment for a second municipal sub-station to be installed in a brick building, the property of the McFarlane Engineering Company for the purpose of supplying this company with power. The equipment consists of three 150-kv-a., 26,400/2,300-volt Moloney Electric Company's transformers, protected by expulsion type fuses, choke coils and air-break switch.

One 2,300-volt, 3-phase feeder panel purchased from Canadian General Electric Company is erected equipped with metering apparatus and oil switch for controlling the power to the company's factory.

The equipment is being installed by the Commission's construction staff. This station will be completed ready for service in November.

## KENT TRANSFORMER STATION

No work was undertaken in this station during the year.

### Ridgetown Distributing Station

The building referred to in last annual report was completed early in November and the electrical equipment installed and placed in service November 24th.

### Blenheim Distributing Station

The installation of the 22-k.w. constant current transformer and panel for same mentioned in the last report was completed and this equipment was placed in service in December.

### Petrolia Distributing Station

The building for this station was completed in December. The contract for the electrical equipment was awarded to the Canadian General Electric Company and included two 4,000-volt feeder panels and two street lighting feeder panels for the local Commission. The contract also included one 4,000-volt feeder panel for supplying the municipality of Wyoming.

The two 16-kw. constant current transformers purchased previously by the Commission for the municipality were installed, and the entire station, excepting the Wyoming feeder, was placed in service on April 25th. The Wyoming feeder was completed later and placed in service October 4th.

### Forest Distributing Station

The corporation of Forest decided to take power from the Commission instead of generating same by steam. It was arranged to use a part of their present building to house the necessary electrical material.

On September 5th a contract was placed with the Canadian Westinghouse Company for a standard type " H " station equipment which will be installed by them and which will consist of three 75-kv-a., 26,400/2,300-volt, single-phase transformers together with the switching equipment and connecting material for one incoming 26,400-volt line and one 2,300-volt feeder. The Westinghouse equipment is due for shipment early in December.

### Sarnia Municipal Station

It has been arranged to supply the corporation of Sarnia with power over two 26,400-volt, 3-phase lines from the Kent Transformer Station. This equipment will consist of three 750-kv-a., 3-phase, 26,400/4,000-volt water-cooled transformers, with provision for one future transformer, four 28-k.w., 6.6-ampere constant current street lighting transformers, three 25-kv-a. station service transformers and one 75-kv-a., 4,000-volt feeder potential regulator, together with switching equipment for two incoming 26,400-volt lines, three 4,000-volt commercial lighting feeders, four 4,000-volt power feeders, one 4,000-volt feeder to railway bus, and one 4,000-volt feeder to the constant current transformer bus. The contract for the three 750-kv-a. transformers was placed with the Canadian General Electric Company on May 9th.

Five of the existing switchboard panels will be used in the new switchboard. All the remaining switching equipment, together with the 75-kv-a. potential regulator and the service transformers were purchased from the Canadian General Electric Company on August 14th, and are due for shipment on December 29th, 1916, excepting the 26,400-volt oil switches, which are due on March 14th, 1917.

The 28-k.w. street lighting transformers were purchased from A. H. Winter Joyner, Toronto, on May 23rd. One of these transformers was shipped to the Commission's Testing Laboratory for special tests.

Arrangements are being made to transfer a 26,400-volt oil switch from the Commission's Essex Station and to have the Canadian General Electric Company

ship some 26,400-volt disconnecting switches in order to make temporary connections to place two of the 750-kv-a. transformers in service early in November.

This equipment will be installed by the Hydro-Electric Power Commission's Construction Department, in the existing steam generating station formerly owned by the Sarnia Gas and Electric Company. Power to this station will be metered at the incoming 26,400-volt lines.

On September 7th, a contract was placed with the Canadian General Electric Company to supply and install one 410-kv-a., 4,000-volt, 3-phase, 25-cycle synchronous motor and base to replace an existing 450-h.p., 23,000-volt, 3-phase, 60-cycle induction motor which is direct connected to a 300 kw. D.C. 600-volt railway generator. This motor is due for shipment on February 21st, 1917.

## ESSEX TRANSFORMER STATION

In order to provide temporary switching equipment at Sarnia Municipal Station, one spare 26,400-volt oil switch with current transformers was removed from Essex Transformer Station and shipped to Sarnia. This will be returned to Essex Station and re-installed at a later date.

### Walkerville Municipal Sub-Station

Engineering assistance was given to Walkerville Hydro-Electric System in connection with transformer repairs, also in connection with preparation of plans and specifications for the switching equipment required for controlling one 400-kv-a. 3-phase, O.I.W.C., 25-cycle, 26,400/2,300-volt transformer of Moloney Electric Company's manufacture, to supply the 400-kv-a. 2,300-volt feeder to the Canadian Bridge Company.

## YORK TRANSFORMER STATION

It was decided to construct a transformer and interswitching station near the western limits of the City of Toronto, same to be used as a transformer station to relieve Toronto Transformer Station, and to supply power in New Toronto and the vicinity, and for interswitching between the two present and two new lines from Dundas and the two present lines into Toronto. It is the intention to ultimately deliver power from this station at 26,400 volts, but for the present it is intended to install the two banks of 2,500-kv-a. transformers now in Toronto Station, but which will be replaced next summer by 5,000-kv-a. units and operate at 13,200 volts.

# WASDELL'S FALLS SYSTEM

## WASDELL'S FALLS GENERATING STATION

It was decided to use one of the two 22,000-volt lines out of the Wasdell's Falls Generating Station as a tie line to the Severn System, and as a feeder to the Corporation of Orillia Station and to instal the necessary metering equipment to measure the power supplied over this line.

Plans were prepared showing the necessary changes in the original arrangement. The material was ordered by the Operating Department. The necessary changes, except the metering equipment, were completed on July 23rd, 1916, and the metering equipment will be completed when the new meters arrive at the station, all the installation work being done by the Operating Department.

### Beaverton Distributing Station

There will be installed in the Beaverton Distributing Station the Canadian Westinghouse 22,000-volt, low equivalent lightning arrester, which will be moved from Cannington Distributing Station.

### Cannington Distributing Station

An order was placed with the Canadian General Electric Company for one 22,000-volt electrolytic lightning arrester, to be installed in the Cannington Distributing Station. This arrester will replace the Canadian Westinghouse low equivalent 22,000-volt arrester now installed in this station and which will then be moved to Beaverton Distributing Station.

## SEVERN SYSTEM

## BIG CHUTE POWER HOUSE

In December estimates were prepared covering additional electrical equipment and superstructure for contemplated increased generator capacity.

### Collingwood Distributing Station

Owing to the increase of the load at this station, it was found necessary to increase the transformer capacity, and on December 22nd, the contract was awarded to the Canadian General Electric Company for three 400-kv-a. 22,000/2,300-volt 60-cycle, single-phase transformers to replace the three 250-kv-a. Canadian General Electric transformers originally installed.

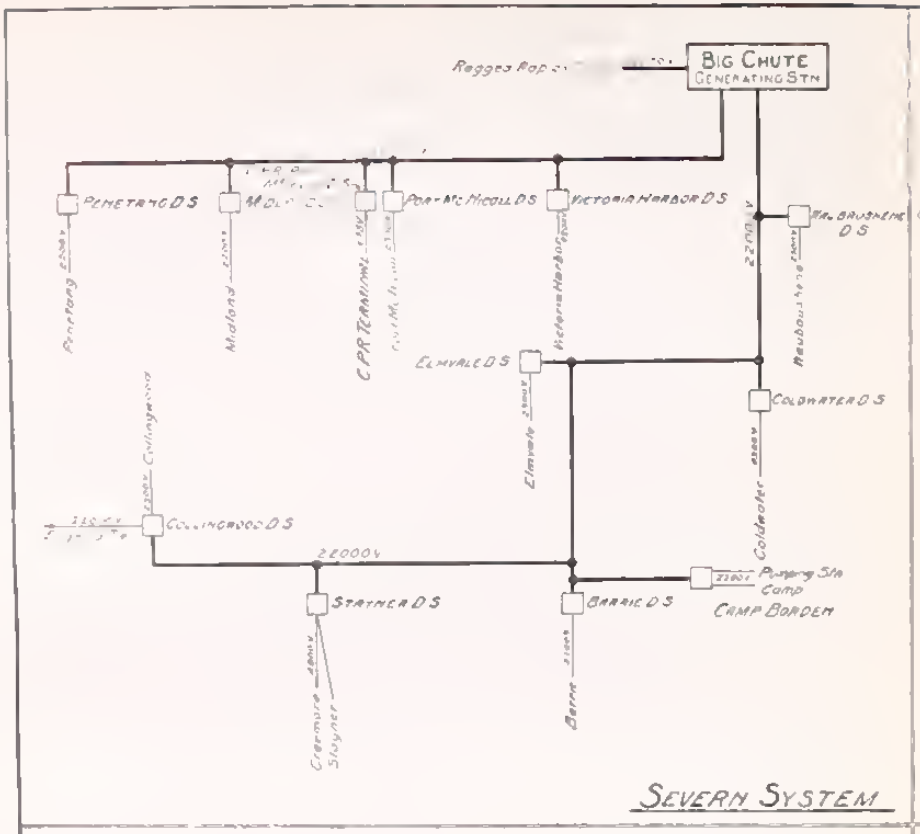
Plans showing the changes in the station were prepared and the necessary additional material was ordered. The installation was made by the Commission's Construction Department and was completed and put into service on May 1st. A 24-inch roof ventilator, purchased from the A. B. Ormsby Company, was also installed to obtain better ventilation for this station, required on account of the larger size of the transformers.

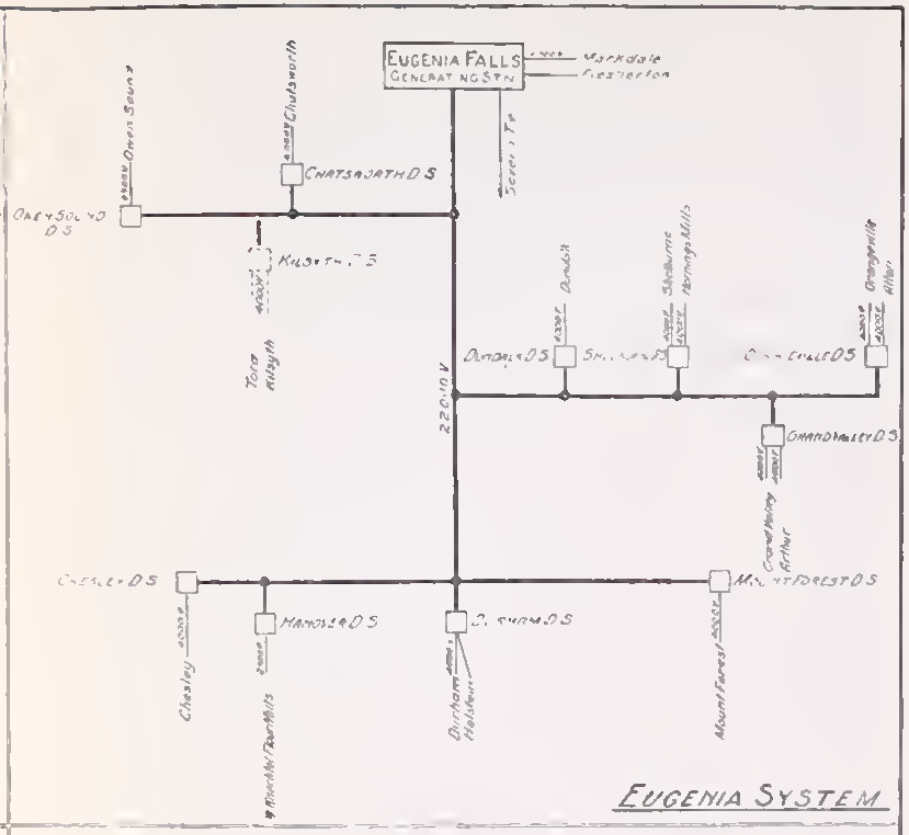
The 250-kv-a. transformers were shipped to Port McNicoll for installation in the distributing station at Canadian Pacific Railway Company's Terminal.

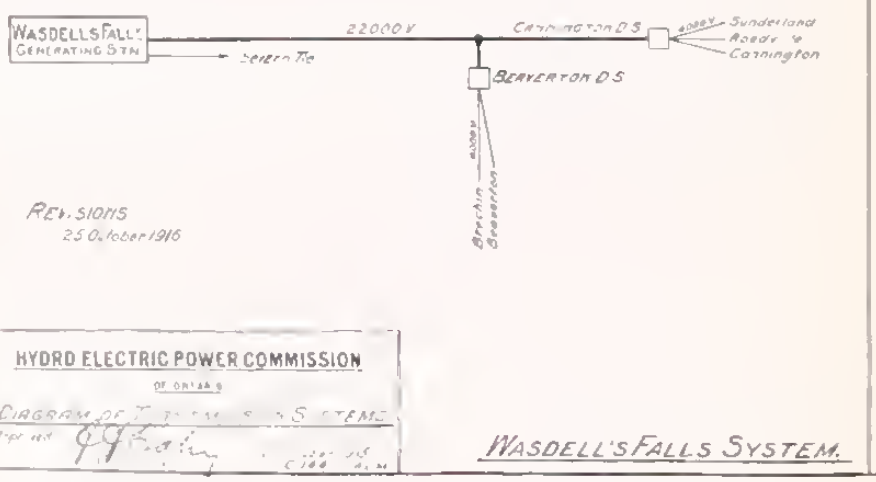
### Port McNicoll (Canadian Pacific Railway) Distributing Station

Owing to the Canadian Pacific Railway Company having signed a contract for power for use in the elevator at Port McNicoll, a modified type "G" station was authorized. Plans were prepared and arrangements made with the Railway Company to install the Commission's equipment in their steam generating station. The necessary changes in the building were made by the Railway Company and the Commission installed the three 250-kv-a. 22,000/2,200/550-volt transformers which were transferred from Collingwood Distributing Station. A General Electric 22,000-volt K-21 oil switch, and an electrolytic lightning arrester was obtained from the Walkerville Hydro-Electric Commission and the remaining material required was purchased from Canadian General Electric Company and the Canadian Westinghouse Company, the latter supplying the metering equipment. Two incoming 22,000-volt, 60-cycle, 3-phase feeders supply this station and power is sold to the Railway Company at the low tension side of the transformers.

All the equipment in this station was installed by the Commission's Construction staff and the station was placed in operation on July 15th.

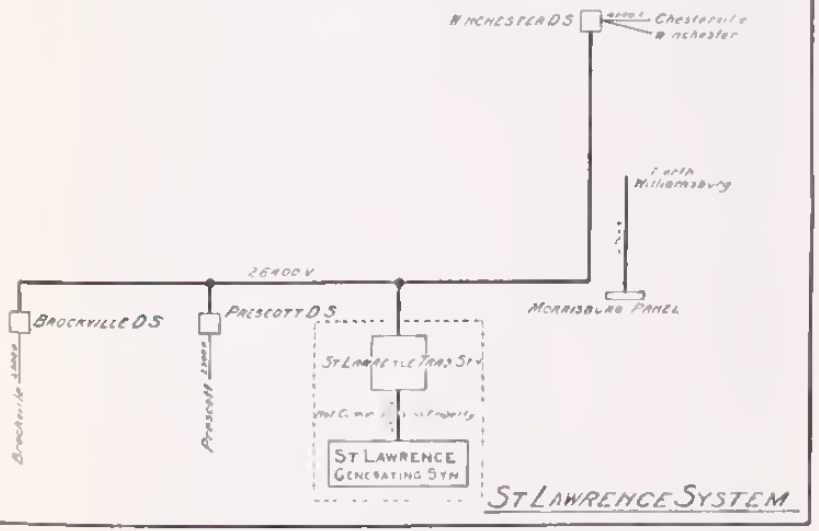



REVISIONS
25 October 1916

HYDRO ELECTRIC POWER COMMISSION
OF ONTARIO
DIAGRAM OF TRANSMISSION SYSTEMS



### Camp Borden Municipal Station

Owing to the Commission having contracted to supply the Department of Militia and Defence with power for Camp Borden, a distributing station was authorized. Drawings were immediately prepared for a combined type "G" distributing station and pump house. The pump house which was 40 feet by 45 feet, and the distributing station, were built of brick by the Department of Militia and Defence, according to the plans prepared by the Commission.

The switching equipment was purchased by the Commission from the Canadian Westinghouse Company and consisted of one 22,000-volt type "E" oil switch with the necessary high-tension material, and two 2,200-volt feeders, with meter equipment for measuring the power on the 2,200-volt side of the transformers. The transformers were of Canadian Westinghouse Company's make, rated at 125-kv-a. 22,000/2,200-volt, 60 cycle, single-phase, and were purchased from the Pine River Power Company. There was also installed one 22,000-volt electrolytic lightning arrester, purchased from the Canadian General Electric Company. All of this equipment was installed in the distributing station.

In the pump house the installation consisted of two 150-h.p. 2,200-volt induction motors with starting compensators and relays to drive two belt-driven water pumps.

Foundations for this building were started about June 9th, and by June 21st work on the building was advanced sufficiently for the electrical construction work to commence. Work was started at once by the Commission's construction staff on the erection of all the electrical equipment for the distributing station and the pump house, and on June 29th this station was put into service, and one motor made ready for pumping. The second motor was ready for service on July 21st.

### Coldwater Distributing Station

As the load at Coldwater Distributing Station did not warrant the transformer capacity installed, consisting of three 75 kv-a. Canadian General Electric Company's transformers and as use could be made of same at Grand Valley Distributing Station, it was decided to purchase two 25 kv-a. units and install them in place of the 75 kv-a. units. It was also decided to remove the 22,000 volt oil switch from this station and substitute fuses for same.

Accordingly two 25 kv-a. 22,000/2,300 volt transformers were purchased from the Moloney Electric Company and as soon as they are installed, the 75 kv-a. units with the oil switch will be removed and shipped to Grand Valley, and 22,000 volt "S & C." fuses installed to protect the transformers. This work was done by the Commission's construction staff.

## EUGENIA SYSTEM

## EUGENIA FALLS GENERATING STATION

### Electrical Equipment

The characteristic tests on the generating equipment were completed early in November and the switching equipment tested out and the station was formally placed in service on November 19th.

### Operators' Cottages

Owing to the isolated location of the Eugenia Generating Station it was found necessary to provide living accommodation for the operating staff. A single house and a pair of semi-detached houses were constructed in the vicinity of the Generating Station.

### 1916 Extension

It was decided to put in an additional 22,000 volt line with lightning arresters and metering equipment to be used as a tie line to Collingwood Station.

Plans were prepared showing necessary changes in the electrical equipment using the present transformer oil switch for the new line. The additional 22,000 volt apparatus and the switchboard panel with graphic wattmeters was purchased from the Canadian Westinghouse Company; three Weston ammeters were purchased from A. H. Winter Joyner.

The tie line was connected temporarily by the Commission's Construction Department on October 18th, and will be completed by them when all apparatus arrives at the station.

### Markdale Municipal Station

The switchboard panel and constant current transformer referred to in last annual report to supply the street lighting system was installed and placed in service the early part of February.

### Owen Sound Distributing Station

This station, described in last annual report, was placed in temporary service on November 18th, and equipment was permanently completed on January 30th. The electrical equipment was installed in this station by the construction staff of the Commission, and consists of three 550 kv-a. 22,000/2,300 volt, Canadian Westinghouse transformers fed from two 22,000 volt lines and protected with Canadian Westinghouse type "E" oil switches and choke coils and Canadian General Electric Company electrolytic lightning arresters. Provision is made for installation of a second similar bank of transformers at a later date.

Power is supplied at 2,300 volts to the Municipality's switching equipment consisting of one main oil switch between transformers and bus and two power feeders, one commercial lighting feeder, and one street lighting feeder. The two panels controlling the two steam driven units have been moved into the new building and arrangements made to synchronize one or both units with the Commission's system.

### Chatsworth Distributing Station

The distributing station at Chatsworth as described in previous report was completed and placed in service on November 18th.

### Chesley Distributing Station

The distributing station at Chesley was completed early in March and placed in operation on June 18th.

A 16 kw., 6.6 ampere, 2,300 volt, 60 cycle, Canadian Westinghouse constant current transformer, purchased from the Municipality of Palmerston was installed in this station by the Commission's construction staff for the Municipality of Chesley, for street lighting service.

### Durham Distributing Station

The distributing station at Durham was completed and placed in service on November 18th.

The 100 kv-a. 4,000 volt feeder to supply the Village of Holstein was installed by the Canadian General Electric Company, and was placed in service April 3rd.

### Dundalk Distributing Station

The distributing station at Dundalk was completed and placed in service on November 18th.

### Mount Forest Distributing Station

The installation of the electrical equipment was completed by the Canadian General Electric Company, and station was placed in service on November 18th.

A 20 kw. constant current transformer, the property of the Municipality, is installed in this station for street lighting service.

### Hanover Distributing Station

Arrangements were made to supply power to the flour mills of Wm. Knechtel at Hanover. A temporary wooden building was erected on his property and two 40 kv-a. 22,000/2,200 volt Canadian Westinghouse Company transformers were transferred from Hornings' Mills Power House to Hanover and there installed. These transformers are protected on the 22,000 volt side by "S. & C." fuses and on the secondary side by a Canadian General Electric "K-3" 2,300 volt oil switch, obtained from the Commission's stores.

This station was put in service in September.

### Shelburne Distributing Station

The original station was part of the property purchased from the Pine River Light and Power Company. The building was of brick with gable tin roof and contained three 50 kv-a. Allis Chalmers 22,000/2,200 volt transformers, one electrolytic 22,000 volt lightning arrester manufactured by the Canadian Westinghouse Company, and one small switchboard panel with voltmeter and ammeters.

The original electrical apparatus was removed to a temporary building alongside of the old building and a contract was let to Messrs. Wells and Gray to remodel the building to resemble our standard type "H" station building.

New high tension switching equipment was ordered from the Canadian Westinghouse Company and a 2,000 volt feeder panel was transferred from the Pine River Power Company's power house. The temporary building was destroyed by fire before the apparatus was moved into the remodelled building and practically all the equipment was lost. In order to restore service two transformers of 25 kv-a. capacity, which had just been completed by the Moloney Electric Company for Coldwater Distributing Station, were rushed immediately to Shelburne by express, and installed temporarily in the remodelled brick building thus giving service to Shelburne after a very short interruption. New transformers for Shelburne Distributing Station were necessary and a contract was let to the Moloney Electric Company for three 50 kv-a. 22,000/2,300 volt transformers. These will be delivered in January, 1917. The new permanent switching equipment has been installed.

The Police Village of Hornings Mills is supplied from this station by a 4,000 volt feeder, the load on this feeder being measured on Canadian Westinghouse Company Type "RO" maximum demand meter mounted on the Shelburne feeder panel.

On the authority of the Corporation of Shelburne, a 12 kw. 6.6 ampere constant current Adams Bagnall transformer and a panel for same was ordered from the Northern Electric Company. This was installed temporarily in the Town Hall in April, by the Commission's construction staff. It will be transferred in a short time to the remodelled distributing station.

### Orangeville Distributing Station

The old station of the Pine River Light and Power Company was deemed unsuitable and the construction of a new type "G" station building was authorized. The contract was awarded to Messrs. Wells and Gray of Toronto, at the end of July, for the construction of this building, but construction was not started for some time. A 22,000 volt type "K-21" Canadian General Electric Company oil switch was transferred from Coldwater Distributing Station and re-arranged and installed in this new building, with new 22,000 volt wiring and connecting material ordered from the Canadian Westinghouse Company. A 22,000 volt electrolytic lightning arrester of the latter company's make was transferred from the Pine River Light and Power Company's station at Hornings' Mills and installed.

The two 125 kv-a. 22,000/2,200 volt single phase transformers, one of Allis-Chalmers Bullock Company's make, the other of Canadian Westinghouse Company's make, which were purchased with the Pine River Light and Power Company's station at Orangeville will be overhauled and installed in the new building. A third 125 kv-a. transformer, to complete the bank, will be ordered in a short time. Two 4,000 volt feeder panels were transferred from Midland Distributing Station to Orangeville and remodelled to suit the requirements.

The old station will be kept in service until the equipment, excepting the transformers, is installed in the new building, and when this work is completed, the transformers will be moved.

On the authority of the Municipality of Orangeville, a contract was placed in September with A. H. Winter Joyner, Limited, for two 10 kw., 6.6 ampere, 2,300 volt, Adams Bagnall constant current transformers with two switchboard panels for same. When these are delivered, they will be installed in the new station by the Commission's construction staff, who are doing all the installation work in the new building.

The new station will receive power over one 22,000 volt line from the Eugenia transmission system.

### Grand Valley Distributing Station

A type "H" station was authorized for Grand Valley and the contract was let in August for the construction of the building to Mr. H. G. Wynne, of Collingwood. This building was completed in September. The contract for the switching equipment was let to the Canadian General Electric Company. Three 75 kv-a. transformers of Canadian General Electric Company's make will be transferred from Coldwater Distributing Station. There will be two 4,000 volt feeders, one to supply the Municipality of Grand Valley, and the other to supply

the Municipality of Arthur. In addition to the standard equipment, there will be installed one 3 phase 20 kv-a. automatic voltage regulator on the Arthur 4,000 volt feeder and one 3 phase 10 kv-a. voltage regulator on the Grand Valley feeder. These regulators were purchased from the Canadian General Electric Company. Temporary service will be given these municipalities in November.

### Kilsyth Distributing Station

The construction of a pole type distributing station near Kilsyth, to supply power to Kilsyth and to Tara has been authorized. This station will be equipped with one 75 kv-a. 3 phase 22,000/4,000 volt 60 cycle outdoor type transformer, and with two feeder circuits with metering equipment. A careful study of designs for pole type stations is being made, before proceeding with this station, in order to develop a satisfactory standard design of pole type stations for similar requirements.

## SOUTH FALLS SYSTEM

### SOUTH FALLS GENERATING STATION

The specifications for the building, transformers and switching equipment were completed and contracts were awarded to Messrs. Witchall & Sons, of Toronto, for the construction of the building, and to the Canadian General Electric Company, Limited, for all the electrical equipment, excepting meters and direct current circuit breakers. The indicating meters were ordered from the Weston Electrical Instrument Company through A. H. Winter Joyner, Limited, Toronto, and the recording meters were obtained from the Canadian Westinghouse Company. The direct current circuit breakers on the exciters were ordered from the Cutter Company.

The electrical apparatus supplied by the Canadian General Electric Company consists of one 750 kv-a. 3 phase, 60 cycle, 6,600 volt, 720 r.p.m. waterwheel type generator; one 20 kw. 125 volt, 1,200 r.p.m. compound wound exciter direct connected to a 35 h.p. 3 phase, 60 cycle, 220 volt induction motor; three 400 kv-a. single phase 60 cycle, 25,000/22,000—6,900/6,600/2,300 volt O.I.S.C. transformers; three 30 kv-a. 6,600/220/110 volt station service transformers; two 22,000 volt feeder equipments and four 6,600 volt feeder equipments. The old switchboard was dismantled and the old connecting cables removed and new equipment used to replace them.

The building extension is of pressed brick and steel construction with concrete floors and roof. A concrete roof was built over the older part of the station and a new concrete floor was also laid in this part of the building.

Owing to the difficulties in carrying on construction work, incident to the war conditions, this plant was not completed as early as had been expected.

The installation was completed and the new equipment placed in service in September. During the installation of this new equipment, the operation of the 450 kv-a. generator originally in this station and the service on the feeder to Gravenhurst was not interfered with.

One of the 22,000 volt electrolytic arresters supplied for this station was transferred to Camp Borden sub-station in August in order to complete the installation of protective equipment at that station. This will not be replaced at South Falls until the second 22,000 volt line is to be placed in service.

The 22,000 volt feeder to Huntsville was placed in service on August 24th, with temporary connections.

Plans are being considered at present for installation of a new belt driven exciter for this station.

### Huntsville Distributing Station

The contract for the distributing station building at Huntsville mentioned in last annual report was awarded to Mr. F. Beston and a modified type "G" station building was constructed. The contract for electrical equipment required was placed with the Canadian General Electric Company. This equipment consists of one incoming 22,000 volt feeder with lightning arresters, three 300 kv-a. single phase 60 cycle, 22,000/2,300/575 volt transformers, and two 2,300 volt 3 phase feeders.

The building is of standard type with pressed brick walls, concrete floor and roof and is designed to accommodate transformers of 500 kv-a. size as well as a second incoming line. Provision was made for the future installation of additional 2,300 volt feeders.

The Corporation of Huntsville has installed in this station one 12 kw. 6.6 ampere constant current transformer, Adams Bagnall Company's make, also a control panel for same furnished by the Canadian General Electric Company.

### Corporation of Huntsville

#### Constant Current Transformers

At the request of the Corporation of Huntsville, tenders were obtained and orders placed in February for one 12 kw. 6.6 ampere, 60 cycle constant current transformer and for the control panel and wiring for same. The transformer was purchased from the Northern Electric Company and is of Adams Bagnall Company's manufacture. The panel is of Canadian General Electric make.

### Anglo Canadian Leather Company

Engineering assistance was given to the Anglo Canadian Leather Company in making witness tests at factory of Moloney Electric Company of Canada, Limited, at Windsor, on three 250 kv-a. 2,200/550 volt single phase 60 cycle O.I.S.C. transformers. A report of the tests was made to this company.

## NORTHERN ONTARIO SYSTEM

### Powassan Distributing Station

Lightning arrester equipment has been ordered for the Powassan sub-station from the Moloney Electric Company, which will be installed at an early date.

## CENTRAL ONTARIO SYSTEM

### Kingston Municipal Station

Three 75 kv-a. 13,200/2,300 volt transformers which the Canadian Westinghouse Company were holding to the order of the Commission, were loaned to the Kingston Utilities Commission and shipped the end of October. When released from Kingston, these will be used at Niagara Falls Transformer Station.

## Table No. 1

### CAPACITIES OF TRANSFORMERS INSTALLED OR ORDERED FOR COMMISSION'S STATIONS*

Total Capacity, 310,630 Kv-a.

| Station | Voltage | Transformers Installed | | Transformers Ordered | | Total Station Capacity Kv-a. | System Capacity Kv-a. |
|---|---|---|---|---|---|---|---|
| | | Mfr. | Kv-a. | Mfr. | Kv-a. | | |
| NIAGARA SYSTEM. | 25-Cycle | | | | | | |
| 1. Niagara Transformer Station | 12,000—110,000 | C.W.Co. | 77,000 | C.W.Co. | 22,500 | | |
| | 12,000— 45,700 | C.G.E.Co. | 24,500 | C.G.E.Co. | 10,500 | 134,500 | |
| 2. Dundas Transformer Station | 110,000— 13,200 | C.G.E.Co. | 7,500 | | | 7,500 | |
| Caledonia Dist. Station | 13,200— 2,300 | P.T.Co. | 450 | | | 450 | |
| Waterdown " " | 13,200— 2,300 | C.C.W.Co. | 225 | | | 225 | |
| Hagersville " " | 13,200— 4,000 | C.W.Co. | 225 | | | 225 | |
| Lynden " " | 13,200— 4,000 | C.W.Co. | 225 | | | 225 | |
| 3. Toronto Transformer Station | 110,000— 13,200 | C.G.E.Co. | 32,500† | C.G.E.Co. | 45,000 | 67,500 | |
| 4. London Transformer Station | 110,000— 13,200 | C.G.E.Co. | 8,750 | | | 8,750 | |
| Dorchester Dist. Station | 13,200— 4,000 | C.W.Co. | 225 | | | 225 | |
| Lucan " " | 13,200— 4,000 | C.G.E.Co. | 225 | | | 225 | |
| Delaware " " | 13,200— 4,000 | P.E.Co. | 75 | | | 75 | |
| Exeter " " | 13,200— 4,000 | C.G.E.Co. | 300 | | | 300 | |
| 5. Guelph Transformer Station | 110,000— 13,200 | C.W.Co. | 3,000 | | | 3,000 | |
| Acton Dist. Station | 13,200— 2,300 | S.Co. of C. | 225 | | | 225 | |
| Georgetown Dist. Station | 13,200— 4,000 | C.G.E.Co. | 450 | | | 450 | |
| Rockwood " " | 13,200— 2,300 | C.G.E.Co. | 75 | | | 75 | |
| Cheltenham " " | 13,200— 575 | C.G.E.Co. | 225 | | | 225 | |
| Fergus " " | 13,200— 2,300 | C.G.E.Co. | 225 | | | 225 | |
| Elora " " | 13,200— 4,000 | C.W.Co. | 225 | | | 225 | |
| 6. Preston Transformer Station | 110,000— 6,600 | C.G.E.Co. | 3,000 | | | 3,000 | |
| Breslau Dist. Station | 6,600— 2,300 | C.W.Co. | 225 | | | 225 | |
| 7. Kitchener Transformer Station | 110,000— 13,200 | C.G.E.Co. | 6,000 | | | 6,000 | |
| New Hamburg Dist. Station | 13,200— 2,200 | P.E.Co. | 225 | | | 225 | |
| Baden " " | 13,200— 4,000 | P.E.Co. | 225 | | | 225 | |
| Elmira " " | 13,200— 4,000 | C.W.Co. | 225 | | | 225 | |
| 8. Stratford Transformer Station | 110,000— 13,200 | C.G.E.Co. | 3,000† | | | | |
| | 110,000— 26,400 | C.W.Co. | 5,000 | | | 8,000 | |
| Listowel Dist. Station | 26,400— 4,000 | C.W.Co. | 300 | | | 300 | |
| Harriston " " | 26,400— 4,000 | C.G.E.Co. | 225 | | | 225 | |
| Tavistock " " | 26,400— 4,000 | C.C.W.Co. | 225 | | | 225 | |

* Spare transformers are included. † Transformers to be transferred to another station.

## Table No. 1—Continued

### CAPACITIES OF TRANSFORMERS INSTALLED OR ORDERED FOR COMMISSION'S STATIONS*— Continued

Total Capacity, 310,630 Kv-a.

| Station | Voltage | Transformers Installed | | Transformers Ordered | | Total Station Capacity Kv-a. | System Capacity Kv-a. |
|---|---|---|---|---|---|---|---|
| | | Mfr. | Kv-a. | Mfr. | Kv-a. | | |
| Milverton Dist. Station | 26,400— 4,000 | C.G.E.Co. | 225 | ..... | ..... | 225 | |
| Palmerston " " | 26,400— 4,000 | C.G.E.Co. | 225 | ..... | ..... | 225 | |
| 9. St. Mary's Transformer Station | 110.000— 13,200 | C.G.E.Co. | 3,000 | ..... | ..... | 3,000 | |
| St. Mary's Cement Dist. Station | 13,200— 575 | C.G.E.Co. | 1,500 | ..... | ..... | 1,500 | |
| 10. Woodstock Transformer Station | 110,000— 13,200 | C.G.E.Co. | 3,000 | ..... | ..... | 3,000 | |
| Beachville Dist. Station | 13,200— 2,300 | S.Co. of C. | 150 | ..... | ..... | 150 | |
| Norwich " " | 13,200— 2,300 | S.Co. of C. | 150 | ..... | ..... | 150 | |
| Embro " " | 13,200— 4,000 | C.G.E.Co. | 225 | ..... | ..... | 225 | |
| 11. St. Thomas Transformer Station | 110,000— 13,200 | C.G.E.Co. | 3,000 | ..... | ..... | ..... | |
| | 13,200— 920 | C.W.Co. | 1,110 | ..... | ..... | 4,110 | |
| Port Stanley Dist. Station | 13,200— 2,300 | S.Co. of C. | 150 | ..... | ..... | 150 | |
| Dutton Dist. Station | 13,200— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |
| West Lorne Dist. Station | 13,200— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |
| 12. Cooksville Transformer Station | 110,000— 13,200 | C.G.E.Co. | 5,000 | ..... | ..... | 5,000 | |
| Mimico Dist. Station | 13,200— 2,300 | C.C.W.Co. | 900 | ..... | ..... | 900 | |
| Port Credit Dist. Station | 13,200— 2,300 | C.G.E.Co. | 225 | ..... | ..... | 225 | |
| Cooksville " " | 13,200— 2,300 | P.E.Co. | 40 | ..... | ..... | 40 | |
| Streetsville " " | 13,200— 4,000 | C.G.E.Co. | 225 | ..... | ..... | 225 | |
| Woodbridge " " | 13,200— 4,000 | C.G.E.Co. | 225 | ..... | ..... | 225 | |
| 13. Brant Transformer Station | 110,000— 26,400 | C.W.Co. | 5,000 | ..... | ..... | 5,000 | |
| Waterford Dist. Station | 26,400— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |
| Drumbo " " | 26,400— 4,000 | C.G.E.Co. | 225 | ..... | ..... | 225 | |
| Ayr " " | 26,400— 4,000 | C.G.E.Co. | 225 | ..... | ..... | 225 | |
| St. George " " | 220— 4,000 | C.C.W.Co. | 150 | ..... | ..... | 150 | |
| Burford " " | 26,400— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |
| 14. Kent Transformer Station | 110,000— 26,400 | C.W.Co. | 5,000 | ..... | ..... | 5,000 | |
| Wallaceburg Dist. Station | 26,400— 4,000 | C.G.E.Co. | 450 | ..... | ..... | 450 | |
| Tilbury " " | 26,400— 4,000 | C.G.E.Co. | 300 | ..... | ..... | 300 | |
| Dresden " " | 26,400— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |
| Bothwell " " | 26,400— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |
| Thamesville " " | 26,400— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |
| Ridgetown " " | 26,400— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |
| Blenheim " " | 26,400— 4,000 | C.W.Co. | 225 | ..... | ..... | 225 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Forest Dist. Station | 26,400— 4,000 | | | C.C.W.Co. | 225 | 225 | |
| 15. Essex Transformer Station | 110,000— 26,400 | C.W.Co. | 10,000 | | | 10,000 | |
| | | | | | | | 286,225 |
| EUGENIA SYSTEM. | 60-Cycle | | | | | | |
| Eugenia Generating Station | 4,000— 22,000 | C.W.Co. | 2,700 | | | 2,700 | |
| Owen Sound Dist. Station | 22,000— 2,300 | C.W.Co. | 1,650 | | | 1,650 | |
| Chatsworth " " | 22,000— 4,000 | C.G.E.Co. | 75 | | | 75 | |
| Chesley " " | 22,000— 4,000 | C.G.E.Co. | 300 | | | 300 | |
| Durham " " | 22,000— 4,000 | C.G.E.Co. | 150 | | | 150 | |
| Dundalk " " | 22,000— 4,000 | C.G.E.Co. | 150 | | | 150 | |
| Mount Forest " " | 22,000— 4,000 | C.G.E.Co. | 300 | | | 300 | |
| Hanover " " | 22,000— 2,200 | C.W.Co. | 80 | | | 80 | |
| Shelburne " " | 22,000— 4,000 | M.E.Co. | 50† | M.E.Co. | 150 | 200 | |
| Grand Valley " " | 22,000— 4,000 | | | C.G.E.Co. | 225 | 225† | |
| Orangeville " " | 22,000— 4,000 | A.C. & C.W.Co. | 250 | | | 250 | |
| | | | | | | | 6,080 |
| SEVERN SYSTEM. | 60-Cycle | | | | | | |
| Big Chute Power House | 2,300— 22,000 | C.W.Co. | 3,600 | | | 3,600 | |
| Penetanguishene Dist. Station | 22,000— 2,200 | C.C.W.Co. | 600 | | | 600 | |
| Barrie " " | 22,000— 2,300 | C.G.E.Co. | 700 | | | 700 | |
| Collingwood " " | 22,000— 2,300 | C.G.E.Co. | 1,200 | | | 1,200 | |
| Coldwater Distributing Station | 22,000— 2,300 | C.G.E.Co. | 150 | M.E.Co. | 50 | 200 | |
| Elmvale " " | 22,000— 2,300 | C.W.Co. | 225 | | | 225 | |
| Stayner " " | 22,000— 4,000 | C.W.Co. | 300 | | | 300 | |
| Port McNicoll " " | 22,000— 2,300 | C.G.E.Co. | 50 | | | 50 | |
| Waubaushene " " | 22,000— 2,300 | C.G.E.Co. | 50 | | | 50 | |
| Midland " " | 22,000— 2,300 | M.E.Co. | 450 | | | 450 | |
| C.P.R. Pt. McNicoll Dist. Station | 22,000— 575 | C.G.E.Co. | 750 | | | 750 | |
| | | | | | | | 8,125 |
| WASDELL'S FALLS SYSTEM. | 60-Cycle | | | | | | |
| Generating Station | 2,300— 22,000 | C.W.Co. | 1,050 | | | 1,050 | |
| Beaverton Dist. Station | 22,000— 4,000 | C.W.Co. | 300 | | | 300 | |
| Cannington " " | 22,000— 4,000 | C.W.Co. | 300 | | | 300 | |
| | | | | | | | 1,650 |
| ST. LAWRENCE SYSTEM. | 60-Cycle | | | | | | |
| Prescott Dist. Station | 26,400— 2,300 | C.G.E.Co. | 450 | | | 450 | |
| Winchester " " | 26,400— 2,300 | C.G.E.Co. | 150 | | | 150 | |
| Brockville " " | 26,400— 2,300 | C.G.E.Co. | 600 | | | 600 | |
| | | | | | | | 1,200 |
| PORT ARTHUR SYSTEM. | 60-Cycle | | | | | | |
| Port Arthur Dist. Station | 22,000— 2,200 | S.Co. of C. | 5,250 | | | 5,250 | |
| | | | | | | | 5,250 |
| SOUTH FALLS SYSTEM. | | | | | | | |
| South Falls Generating Station | 6,600— 22,000 | C.G.E.Co. | 1,200 | | | 1,200 | |
| Huntsville Dist. Station | 22,000— 2,300 | C.G.E.Co. | 900 | | | 900 | |
| | | | | | | | 2,100 |

* Spare transformers are included.

† Transformers to be transferred to another station.

## Table No. 2

### STATION TRANSFORMERS ORDERED FOR MUNICIPALITIES AND COMMISSION DURING FISCAL YEAR ENDING OCTOBER 31st, 1916

| Station | Cycles | Voltage | Mfr. | No. | Kv-a. each | Total Kv-a. |
|---|---|---|---|---|---|---|
| Niagara Falls Trans. Station | 25 | 12,000-45,700 | C.G.E.Co. | 3 | 3,500 | 10,500 |
| | 25 | 12,000-63,500 | C.W.Co. | 3 | 7,500 | 22,500 |
| Welland Municipal Station | 25 | 13,200- 2,300 | C.W.Co. | 3 | 150 | 450† |
| Port Robinson Dist. Station | 25 | 13,200- 2,300 | P.E.Co. | 3 | 75 | 225† |
| Toronto Transformer Station | 25 | 63,500-13,200 | C.G.E.Co. | 9 | 5,000 | 45,000 |
| London Transformer Station— | | | | | | |
| Exeter Dist. Station | 25 | 13,200- 2,300 | C.G.E.Co. | 3 | 100 | 300 |
| Guelph Transformer Station— | | | | | | |
| Guelph Municipal Station | 25 | 13,200- 2,300 | C.G.E.Co. | 1 | 550 | 550 |
| Preston Transformer Station | 25 | 63,500-13,200 | C.G.E.Co. | 2 | 750 | 1,500† |
| Stratford Transformer Station— | | | | | | |
| Stratford Municipal Station | 25 | 26,400- 2,300 | C.G.E.Co. | 3 | 750 | 2,250 |
| Seaforth Municipal Station | 25 | 26,400- 2,300 | C.G.E.Co. | 3 | 150 | 450 |
| Mitchell Municipal Station | 25 | 26,400- 575 | C.G.E.Co. | 3 | 75 | 225 |
| Tavistock Dist. Station | 25 | 26,400- 2,300 | C.C.W.Co. | 3 | 75 | 225 |
| Milverton Dist. Station | 25 | 26,400- 4,000 | C.G.E.Co. | 3 | 75 | 225 |
| Harriston Dist. Station | 25 | 26,400- 4,000 | C.G.E.Co. | 3 | 75 | 225 |
| Palmerston Dist. Station | 25 | 26,400- 4,000 | C.G.E.Co. | 3 | 75 | 225 |
| St. Thomas Transformer Station | 25 | 63,500-13,200 | C.G.E.Co. | 2 | 750 | 1,500† |
| St. Thomas Municipal Station | 25 | 13,200- 2,300 | C.G.E.Co. | 2 | 750 | 1,500 |
| West Lorne Dist. Station | 25 | 13,200- 2,300 | C.W.Co. | 3 | 75 | 225 |
| Cooksville Transformer Station— | | | | | | |
| Mimico Distributing Station | 25 | 13,200- 2,300 | J. & P.Co. | 3 | 300 | 900 |
| | 25 | 13,200- 2,200 | C.C.W.Co. | 3 | 150 | 450† |
| Brampton Municipal Station | 25 | 13,200- 575 | M.E.Co. | 3 | 300 | 900 |
| Corporation of Weston | 25 | 13,200- 550 | A.C.B.Co. | 3 | 150 | 450† |
| Brant Transformer Station— | | | | | | |
| Paris Municipal Station | 25 | 26,400- 2,300 | M.E.Co. | 3 | 150 | 450 |
| Kent Transformer Station— | | | | | | |
| Petrolia Distributing Station | 25 | 26,400- 2,300 | C.G.E.Co. | 3 | 150 | 450 |
| Forest Distributing Station | 25 | 26,400- 2,300 | C.W.Co. | 3 | 75 | 225 |
| Sarnia Municipal Station | 25 | 26,400- 4,000 | C.G.E.Co. | 3 | 750 | 2,250 |
| Big Chute Power House— | | | | | | |
| Collingwood Dist. Station | 60 | 22,000- 2,300 | C.G.E.Co. | 3 | 400 | 1,200 |
| Port McNicoll Dist. Station | 60 | 22,000- 550 | C.G.E.Co. | 3 | 250 | 750† |
| Camp Borden Municipal Station | 60 | 22,000- 2,200 | C.W.Co. | 3 | 125 | 375† |
| Coldwater Dist. Station | 60 | 22,000- 2,500 | M.E.Co. | 2 | 25 | 50 |
| Eugenia Falls Generating Station— | | | | | | |
| Hanover Dist. Station | 60 | 22,000- 2,200 | C.W.Co. | 2 | 40 | 80† |
| Shelburne Dist. Station | 60 | 22,000- 2,300 | M.E.Co. | 3 | 50 | 150 |
| Orangeville Dist. Station | 60 | 22,000- 2,200 | C.W.Co. | 1 | 125 | |
| | | | A.C.B.Co. | 1 | 125 | 250† |
| South Falls Generating Station— | 60 | 25,000- 2,300 | C.G.E.Co. | 3 | 400 | 1,200 |
| | | 6,600- 110 | C.G.E.Co. | 3 | 30 | 90 |
| Huntsville Dist. Station | 60 | 22,000- 2,300 | C.G.E.Co. | 3 | 300 | 900 |

† Transformers transferred from other stations. Total Kv-a., 99,1

## LOW-TENSION TRANSMISSION LINES

On October 31st, 1916, there were completed and under construction 1,321 miles of low tension transmission lines, of voltages varying from 46,000 volts to 2,200 volts.

The mileage of these lines is distributed among the various systems as follows:

Niagara System—840.32 miles.
St. Lawrence System—66.35 miles.
Severn System—102.94 miles.
Wasdell's Falls System—65.85 miles.
Eugenia Falls System—219.41 miles.
Muskoka System—26.32 miles.

In the construction of these lines, 8,960 miles of wire, weighing 5,513,923 lbs., and 54,372 wood poles were used.

On the transmission line poles 1,126 miles of single circuit telephone line has been erected for use in operating the system.

During the year 10 gangs were employed, 2 of which, under the direction of a forestry expert were employed solely in trimming trees. These gangs constructed 229 miles of transmission lines as well as distributing systems in 7 towns and villages, and rural lines in 5 townships.

For the above lines 230 crossing plans were prepared and submitted to telephone and railway companies for approval.

The low tension distributing systems were constructed by the commission in the towns and villages of Chesley, Shelbourne, Victoria Harbour, Markdale, Holstein, Orangeville, Grand Valley, and rural lines in the townships of Toronto, Etobicoke, Vaughan, Grantham and Zone.

Although handicapped by a scarcity of labour, and difficulty in obtaining material, some important lines were successfully constructed in record time, to the great satisfaction of the communities benefitted thereby. Among these are Barrie Tap to Camp Borden, Eugenia Falls to Collingwood, and Niagara Falls to Ontario Power Company's Line.

Description

NIAGARA

| Sec. No. | From | To | Length of pole | Span | Miles | No. of Poles |
|---|---|---|---|---|---|---|
| L.T. | | | feet | feet | | |
| 1 | Dundas Sub. H.E.P.C.... | Junction Pole No. 134.... | 40 | 120 | 2.84 | 134 |
| 2 | Junction Pole No. 134.... | Beach Pump House..... | 40 | 120 | 6.34 | 323 |
| 3 | " " No. 134.... | Asylum ..... | 50 | 120 | 1.13 | 67 |
| 4 | Berlin Sub. H.E.P.C.... | Junction Pole No. 10 .... | 40 | ..... | .18 | 10 |
| 5 | Junction Pole No. 10..... | Waterloo ..... | 40 | 120 | 1.64 | 78 |
| 6 | " " No. 10..... | Berlin Corp. Station..... | 45 | 120 | .76 | 35 |
| 7 | Berlin Sub. H.E.P.C..... | New Hamburg..... | 40 | 120 | 12.27 | 556 |
| 8 | Woodstock " .... | Ingersoll ..... | 40 | 120 | 9.90 | 455 |
| 9 | " " .... | Junction Pole No. 508.... | 40 | 120 | 11.12 | 508 |
| 10 | Junction Pole No. 508.... | Tillsonburg..... | 40 | 120 | 10.30 | 467 |
| 11 | " " No. 508.... | Norwich..... | 40 | 120 | 4.59 | 207 |
| 12 | St. Thomas Sub. H.E.P.C. | St. Thomas Corp. Station | 40& 45 | 120 | 1.13 | 50 |
| 13 | Stratford " " | Stratford " " | 40& 45 | 120 | 1.75 | 78 |
| 14 | Preston " " | Junction Pole No. 99..... | 45 | 120 | 2.04 | 99 |
| 15 | Junction Pole No. 99.... | Hespeler..... | 40 | 120 | 2.08 | 99 |
| 16 | " " No. 99.... | Galt..... | 40 | 120 | 3.75 | 173 |
| 17 | Preston Sub. H.E.P.C.... | Preston Corp. Station.... | 35 | 120 | .14 | 11 |
| | | | These poles also carry Section L.T. 35 | | | |
| 18 | London Sub..... | Junction Pole No. 38..... | 40 | 120 | .79 | 38 |
| 19 | Junction Pole No. 38..... | Asylum, London ..... | 45 | 120 | 1.54 | 70 |
| 20 | " " No. 38..... | Junction Pole No. 93..... | 40 | 120 | 1.22 | 55 |
| 21 | London Sub. H.E.P.C.... | London Sub. No. 1..... | 40 | 120 | 3.56 | 178 |
| 22 | Junction Pole No. 93..... | " " No. 1..... | 40 | 120 | 1.71 | 96 |
| 23 | " " No. 93..... | " " No. 2..... | 40 | 120 | .31 | 20 |
| 24 | London Sub. No. 1..... | Springbank ..... | 40 | 120 | 3.55 | 156 |
| 25 | Dundas Sub. H.E.P.C.... | Dundas Town..... | 40& 45 | 120 | .98 | 58 |
| 26 | Cooksville Sub. H.E.P.C. | Port Credit L.S. Road ... | 40 | 120 | 2.74 | 129 |
| 26a | Pt. Credit L.S. Road.... | Port Credit Brick Works | 45 | 120 | .24 | 14 |
| 27 | Cooksville Sub. H.E.P.C. | Brampton ..... | 40 | 120 | 11.24 | 510 |
| | | | These poles also carry Section L.T. 34 Circuits | | | |
| 28 | Junction Pole No. 1547... | Clinton..... | 40 | 120 | 1.27 | 78 |
| 29 | " " No. 1152... | Seaforth..... | 40 | 120 | 1.50 | 74 |
| 30 | " " No. 648.... | Mitchell ..... | 40 | 120 | 1.27 | 63 |
| 31 | Guelph Sub. H.E.P.C..... | O. A. College..... | 40 | 120 | 1.56 | 77 |
| 32 | " H.E.P.C. Sub. Property..... | ..... | 40 | 120 | .09 | 8 |
| | | | | | 18 poles on | Station |
| 34 | Cooksville Sub. H.E.P.C.. | Weston..... | 40 | 120 | 14.07 | 551 |
| | | | | These Circuits carried on | | |
| 35 | Preston Sub. H.E.P.C.... | G. P. & H. Ry..... | 40 | 120 | .12 | 6 |
| | | | | These Circuits carried on | | |
| 36 | Junction Pole No. 84, Port Credit..... | Mimico (New Toronto)... | 45 | 120 | 5.75 | 266 |
| 38 | Dundas Sub. H.E.P.C.... | Dom. Sewer Pipe Works. | 40 | 120 | 7.35 | 350 |
| 39 | Hamilton Asylum P.H... | Hamilton Asylum..... | 35 | 120 | .63 | 30 |
| 40 | Junction Pole No. 260.... | Waterdown ..... | 35 | 120 | 1.50 | 72 |
| 40a | Dom. Sewer Pipe Works. | Junction Pole No. 260.... | ..... | ..... | 1.92 | ..... |
| 41 | St. Thomas Sub. H.E.P.C. | Port Stanley..... | 35 | 120 | 12.27 | 573 |
| 42 | Junction Pole, No. 290, LT. 8 | Standard White Lime Co. | ..... | ..... | 1.00 | 2 |
| | | | | These circuits carried on Section | | |
| 43 | Dundas Sub. H.E.P.C.... | Jno. Bertram & Son..... | 40 | 120 | 1.21 | 10 |
| | | | These | Circuits carried on | Section | |
| 44 | Baden Sub..... | Wellesley ..... | 30 | 150 | 7.92 | 316 |
| 45 | Junct. Pole No. 240 L.T. 8 | Beachville ..... | 40 | 120 | .09 | 3 |
| 46 | St. Mary's Sub..... | St. Mary's Cement Works | 40 | 120 | 2.22 | 80 |

of Lines.

SYSTEM.

| Voltage | No. of Circuits | Power Cables B. & S. Gauge | Telephone Wires, B.&S & B.W.G. Gauge | Ground Wire | Work Commenced | Work Completed | In Operation |
|---|---|---|---|---|---|---|---|
| 13,200 | 2 | No. 1/0 Alum | 10 Copper | ¼" Gal. Steel | July 13, 1910 | Jan. 2, 1911 | |
| " | 2 | 1/0 " | 10 " | ¼" " | July 13, " | Jan. 2, " | |
| " | 1 | 2 " | 10 " | ¼" " | Dec. 5, " | Feb. 8, " | |
| " | 2 | 1/0 " | 10 " | ¼" " | Aug. 25, " | Sept. 11, 1910 | |
| " | 2 | 1/0 " | 10 " | ¼" " | Sept. 11, " | Nov. 25, " | |
| " | 2 | 1/0 " | 10 " | ¼" " | Aug. 25, " | Sept. 11, " | |
| " | 2 | 2 " | 10 " | ¼" " | Sept. 11. " | Jan. 2, 1911 | Feb. 3, 1911 |
| " | 2 | 1/0 " | 10 " | ¼" " | Nov. 14, " | Mar. 28, " | |
| " | 2 | 1/0 " | 10 " | ¼" " | Jan. 2, 1911 | Apr. 29, " | |
| " | 2 | 1/0 " | 10 " | ¼" " | Jan. 2, " | Apr. 29, " | |
| " | 1 | 2 " | 10 " | ¼" " | Feb. 13, " | Mar. 30 " | |
| " | 2 | 1/0 " | 10 " | ¼" " | Dec. 14, 1910 | Dec. 30, 1910 | |
| " | 1 | 2 Copper | 10 " | ¼" " | Built by Corporation | | |
| 6,600 | 3 | 1-2 Alum<br>2-4/0 " | 10 " | ¼" " | Oct. 8, 1910 | Jan. 19, 1911 | |
| " | 1 | 2 Alum | 10 " | ¼" " | Oct. 8, " | Dec. 30, 1910 | |
| " | 2 | 4/0 " | 10 " | ¼" " | Oct. 8, " | Jan. 19, 1911 | |
| " | 1 | 2 Copper | 10 " | ¼" " | Built by Corporation. | | |
| circuits to G. P. H. Railway Sub. | | | | | | | |
| 13,200 | 2 | 1-3/0 Alum<br>1-2 " | 10 Copper | ¼" " | Oct. 26, 1910 | Jan. 10, 1911 | |
| " | 1 | 2 " | 10 " | ¼" " | Oct. 26, " | Jan. 19. " | |
| " | 1 | 3/0 " | 10 " | ¼" " | Oct. 24, " | Jan. 21, " | |
| " | 1 | 3/0 " | 10 " | ¼" " | Oct. 20, " | Jan. 20, " | |
| " | 2 | 1-3/0 "<br>1-1/0 " | 10 " | ¼" " | Dec. 23, " | Jan. 20, " | |
| " | 1 | 1/0 " | 10 " | ¼" " | Dec. 23, " | Jan. 20, " | |
| " | 1 | 1/0 " | 10 " | ¼" " | Jan. 1, 1911 | Jan. 7, " | |
| 2,200 | 1 | 400,000c.m. Alum<br>250,000c.m. Copper | ..... | | Dec. 1, 1910 | Jan. 1, " | |
| 13,200 | 2 | 2 Alum | 10 Copper | ¼" Gal. Steel | Feb. 24, 1911 | July 10, " | |
| " | 2 | 2 " | 10 " | ¼" " | Apr. 5, " | July 23 " | |
| " | 2 | 2 " | 10 " | ¼" " | Feb. 15, " | May 6, " | |
| from poles No. 1 to 89—1.94 miles | | | | | | | |
| 26,400 | 2 | 3/0 Alum | 10 Copper | ¼" " | Apr. 6, " | Aug. 4, " | |
| " | 2 | 2 Alum | 10 " | ¼" " | Mar. 25, " | Sept. 13, " | |
| " | 2 | 2 " | 10 " | ¼" " | Mar. 24, " | Aug. 3, " | |
| 13,200 | 1 | 1/0 " | 10 " | ¼" " | July 21, " | Nov. 9, " | |
| 550d.c. | 1 | Municipal lines | | | | | |
| 2,200a.c. | 4 | | | | | | |
| 13,200a.c. | 3 | 1/0 Alum | 10 Copper | ¼" " | Aug. 7, 1911 | Sept. 3, 1911 | Sept. 4, 1911 |
| Property in all. | | | | | | | |
| 13,200 | 2 | 2 Alum | 8 Copper | ¼" " | Apr. 19. " | July 24, " | |
| Section L.T. 27 poles, 1 to 89, inclusive | | | | | | | |
| 6,600 | 1 | 1/0 Alum | 10 Copper | ¼" " | Mar. 13, " | Mar. 21, " | |
| Section L.T, 17 poles, 1 to 11, inclusive | | | | | | | |
| 13,200 | 1 | 2 Alum | 8 Copper | ¼" " | Apr. 26, " | Feb. 29, 1912 | |
| " | 1 | 2 " | 8 " | ¼" " | July 21, " | Dec. 19, 1911 | Apr. 6, 1912 |
| 2,200 | 2 | 4 Copper | 10 " | ..... | Sept. 6, " | Oct, 27, " | Apr. 6 " |
| 13,200 | 1 | 2 Alum | 8 " | ¼" Gal. Steel | Sept. 30, " | Oct. 10, " | Apr. 6 " |
| " | 1 | 2 " | 8 " | ¼" " | Sept. 30, " | Oct. 7, " | Mar. 1 " |
| " | 1 | 2 " | 8 " | ¼" " | Oct. 16, " | Mar. 8, 1912 | Mar. 9 " |
| 2,200 | 1 | 2 " | ..... | ..... | ..... | ..... | ..... |
| L.T. 8 poles. from Beachville pole 290 to pole 240. | | | | | | | |
| 13,200 | 1 | 2 Alum | 10 Copper | ¼" Gal. Steel | Dec. 1, 1911 | Dec. 19, 1911 | Dec. 21, 1911 |
| L.T. 25 poles, 1 to 58 inclusive.—.98 miles | | | | | | | |
| 4,000 | 1 | 4 Copper | ..... | 6 B.W.G. Iron | May 16, 1916 | Aug. 11, 1916 | Oct. 23, 1916 |
| 13,200 | 1 | 1/0 Alum | 8 Copper | ¼" Gal. Steel | June 1, 1912 | June 29, 1912 | July 17, 1912 |
| " | 1 | 3/0 " | 8 " | ¼" " | July 15, " | Aug. 19, " | Sep. 7, " |

## Description of

NIAGARA

| Sec. No. | From | To | Length of Pole | Span | Miles | No. of Poles |
|---|---|---|---|---|---|---|
| | | | feet | feet | | |
| 47 | Dundas Sub | Caledonia | 40 | 120 | 14.36 | 674 |
| 47a | Caledonia | Paris Alabastine Co | | | .22 | |
| | | | | | These Circuits carried on | |
| 48 | Caledonia | Junction Pole No. 940 | 40 | 120 | 5.87 | 267 |
| 49 | Junction Pole No. 940 | Hagersville | 40 | 120 | 3.79 | 176 |
| 50 | " No. 940 | Lythmore | 40 | 120 | 4.98 | 230 |
| 55 | St. Thomas Sub. H.E.P.C. | L.L.E. Ry. Sub | 40 | 120 | 1.68 | 88 |
| 56 | Port Credit | Toronto Golf Club | 30 | 120 | 3.24 | 11 |
| 56a | Extension from Sect. L.T. 56 on T.G.C. property | | | | Carried on Section .90 | 37 |
| 57 | O. A. College | Guelph Prison Farm. Pole 156 | 40 | 120 | 1.93 | 86 |
| 57a | Guelph Prison Farm | Property | 40 | 120 | .08 | 4 |
| 58 | Guelph Prison Farm, Pole 156 | Junction Pole No. 454 | 40 | 120 | 6.42 | 297 |
| 59 | Junction Pole No. 454 | Acton | 40 | 120 | 5.82 | 268 |
| 60 | St. Catharines | Port Dalhousie | 30 | 120 | 3.18 | 142 |
| 61 | Caledonia Sub | Caledonia | | | .30 | |
| | | | | | Carried on | |
| 62 | Junction Pole No. 230 L.T. 27 | Milton | 40 | 120 | 16.65 | 740 |
| 63 | Preston Sub | Doon Twine Mill | 35 | 120 | 4.18 | 208 |
| | | | | | Carried on Section | |
| 64 | Mimico Sub | Mimico Asylum | | | 1.51 | 17 |
| | | | | | Carried on Section | |
| 65 | Acton | Georgetown | 40 | 120 | 9.03 | 411 |
| 66 | Junction Pole No. 454 | Rockwood | 35 | 120 | 1.64 | 77 |
| 68 | Brant Station | Paris | 40 | 120 | 3.21 | 152 |
| 69 | " " | Brantford | 40 | 120 | 6.66 | 320 |
| 71 | Waterloo | Elmira | 40 | 120 | 10.93 | 518 |
| 72 | Preston | Breslau | 40 | 120 | 6.48 | 293 |
| 73 | Niagara Falls | Junction Pole 113 | 48 | 250 | 5.00 | 113 |
| 74 | Junction Pole 113 | Union Carbide Co | 48 | 250 | 10.50 | 235 |
| 75 | " 303 | Electric Steel & Metal Co | 48 | 250 | 1.93 | 45 |
| 76 | Junction Pole No. 38. L.T. 18 | Crumlin Junction | 35 | 132 | 5.31 | 218 |
| 77 | Crumlin Junction | Thorndale | 35 | 132 | 7.91 | 310 |
| 78 | " " | Thamesford | 35 | 132 | 6.85 | 281 |
| 79 | Jct. Pole No. 381 L.T. 62 | Streetsville | 45 | 120 | .43 | 19 |
| 81 | Essex Station | Jct. Pole No. 55 | 45 | 120 | 1.10 | 55 |
| 82 | Jct. Pole No. 55 | Windsor | 45 | 120 | 2.27 | 102 |
| 83 | Jct. Pole No. 55 | Walkerville | 40 | 120 | 1.30 | 61 |
| 84 | Kent Station | Chatham | 40 | 132 | 1.93 | 99 |
| 85 | Jct. Pole No. 118 L.T 57 | Jct. Pole No. 776, L.T. 85 | 40 | 120 | 14.61 | 658 |
| 86 | " " 776 " 85. | Elora | 40 | 120 | 1.18 | 58 |
| 87 | " " 776 " 85. | Fergus | 35 | 120 | 1.96 | 94 |
| 88 | Paris | Junction Pole No. 313 | 35–40 | 132 | 7.41 | 312 |
| 89 | Jct. Pole No. 313 L.T. 88 | Ayr | 40 | 120 | 1.20 | 58 |
| 90 | Jct. Pole No. 313 L.T. 88 | Drumbo | 35 | 132 | 6.83 | 284 |
| 91 | Drumbo | Princeton | 35 | 132 | 5.65 | 233 |
| 92 | Drumbo | Plattsville | 35 | 132 | 7.35 | 299 |
| | | | | | 1.00 miles carried | |
| 93 | Jct. Pole No. 388 L.T. 77 | Deller Bros | 30 | 132 | .89 | 48 |
| 94 | Jct. Pole No. 1005 L.T. 65 | I. P. B. Co | 35 | 132 | 5.08 | 221 |
| 95 | London | Lambeth (Pole No. 462) | 40 | 120 | 10.15 | 463 |
| 96 | Lambeth (Pole No. 462) | Komoka Jct. (Pole No. 759) | 40 | 120 | 6.58 | 298 |
| 97 | Komoka Jct. (Pole No. 759) | Mt. Brydges (Pole No. 943) | 40 | 120 | 4.00 | 184 |
| 98 | Mt. Brydges (Pole No. 943) | Strathroy (Pole No. 1,368) | 40 | 120 | 9.27 | 424 |
| 99 | London | Lucan | 35–40 | 132 | 19.18 | 783 |
| 99c | London | Lucan | | | 21.51 | |
| | | | | | These circuits carried | |
| 100 | Niagara Falls | Elect. Devel. Co | 45 | 100 | 1.25 | 52 |

## Lines—Continued

SYSTEM

| Voltage | No. of Circuits | Power Cables B. & S. Gauge | Telephone Wires, B. & S. & B. W. G. Gauge | Ground Wires. | Work Commenced | Work Completed | In Operation |
|---|---|---|---|---|---|---|---|
| 13,200 | 1 | 3/0 Alum | 8 Copper. | ¼" Gal. Steel | May 10, 1912 | Sept. 18, 1912 | Sep. 20, 1912 |
| 2,200 | 1 | 2/0 Copper | ..... | ..... | Sept. 5, " | Sept. 18, " | " 20, " |
| Section L.T. 49 poles. | | | | | | | |
| 13,200 | 1 | 3/0 Alum | 8 Copper | ¼" Gal. Steel | June 22, " | Sept. 18, " | Sep. 20 " |
| " | 1 | 2 " | 10 " | ¼" " | Feb. 28, 1913 | May 2, 1913 | Aug. 15, 1913 |
| " | 1 | 3/0 " | 8 " | ¼" " | June 15, 1912 | Sept. 18, 1912 | Sep. 20 " |
| " | 1 | 2 " | 8 " | ¼" " | Aug. 9, " | Oct. 11, " | Oct. 27, 1912 |
| 2,200 | 1 | 6 D.B.W.P. Copper | ..... | ..... | June 10, " | Aug. 3, " | Aug. 6 " |
| L.T. 36 poles | | | | | | | |
| 2,200 | 1 | 6 " | ..... | ..... | Nov. 22, " | Jan. 3, 1913 | Dec. 24 " |
| 13,200 | 1 | 2 Alum | 8 Copper | ¼" Gal. Steel | Aug. 19, " | Dec. 14, 1912 | Dec. 14 " |
| " | 1 | 2 " | 10 " | ¼" " | May 14, 1913 | May 19, 1913 | Sep. 4 " |
| " | 1 | 2 " | 8 " | ¼" " | Aug. 19, 1912 | Dec. 14, 1912 | Dec. 14, 1912 |
| " | 1 | 2 " | 8 " | ¼" " | " 19, 1912 | Dec. 14, 1912 | Dec. 14 " |
| 2,200 | 1 | 1/0 " | ..... | ..... | Oct. 16, 1912 | Nov. 21, " | Nov. 17 " |
| " | 1 | 4 D.B.W.P. Copper | ..... | ..... | Nov. 20, 1912 | Nov. 30, " | Nov. 30 " |
| Section L.T. 47 poles. | | | | | | | |
| 13,200 | 1 | 3/0 Alum | 10 | ¼" Gal. Steel | Nov. 25, 1912 | Mar. 13, 1913 | Mar. 13, 1913 |
| 6,600 | 1 | 2 " | ..... | ..... | Dec. 2, 1912 | Apl. 11, " | Apl. 1 " |
| L.T. 17 poles, No. 1 to 11, inclusive. L.T. 35 from 11 to 17 inclusive. | | | | | | | |
| 2,200 | 1 | 2 Copper | ..... | ..... | Mar. 30, 1912 | Feb. 3, " | Apl. 26 " |
| L.T., 36 poles | | | | | | | |
| 13,200 | 1 | 3/0 Alum | 10—Copper | ¼" Gal. Steel | Mar. 11, 1913 | Aug. 1, " | Aug. 1 " |
| " | 1 | 2 " | 10 " | ¼" " | May 6, 1913 | July 3, " | Aug. 1 " |
| 26,400 | 2 | 3/0 Alum | 10 " | ¼" " | Nov. 11, 1913 | Jan. 2, 1914 | Jan. 3, 1914 |
| 26,400 | 2 | 3/0 " | 10 " | ¼" " | Dec. 15, 1913 | Jan. 17, " | Jan. 17 " |
| 13,200 | 1 | 2 " | 10 " | ¼" " | May 17, 1913 | Oct. 14, 1913 | Oct. 25, 1913 |
| 6,600 | 1 | 2 " | 10 " | ¼" " | Apr. 4, 1913 | Dec. 23, 1913 | Dec. 23, 1913 |
| 46,000 | 3 | 4/0 Copper | 8 " | ¼" " | Mar. 15, 1914 | Steel Towers. | Aug. 20, 1914 |
| 46,000 | 3 | 4/0 " | 8 " | ¼" " | Mar. 15, 1914 | | Aug. 20, 1914 |
| | | | | ¼" " | | | Oct. 17, 1914 |
| 46,000 | 1 | 2/0 " | 8 " | ¼" " | July 11, 1914 | | |
| 13,200 | 1 | 2 Alum | ..... | ¼" " | Sept. 18, 1913 | May 8, 1914 | Jan. 27, 1914 |
| " | 1 | 2 " | ..... | ¼" " | Oct. 10, 1913 | Feb. 6, 1914 | Feb. 6 " |
| " | 1 | 2 " | ..... | ¼" " | Oct. 13, 1913 | Jan. 19, " | Jan. 27 " |
| " | 1 | 2 " | 10 Copper | ¼" " | Nov. 1, 1913 | Nov. 24, 1913 | Nov. 24, 1913 |
| 26,400 | 4 | 3/0 " | 10 " | ¼" " | July 28, 1914 | Sept. 6, 1914 | Sep. 6, 1914 |
| " | 2 | 3/0 " | 10 " | ¼" " | July 31, 1914 | Sept. 18, 1914 | Sep. 18 " |
| " | 2 | 3/0 " | 10 " | ¼" " | June 2, 1914 | Aug. 1, 1914 | Sep. 6 " |
| " | 2 | 2/0 " | 10 " | ¼" " | Oct. 21, 1914 | Feb. 22, 1915 | Feb 1, 1915 |
| 13,200 | 1 | 3/0 " | 10 " | ¼" " | June 3, 1914 | Oct. 17, 1914 | Oct. 22, 1914 |
| " | 1 | 3/0 " | 10 " | ¼" " | Aug. 18, 1914 | Oct. 28, 1914 | Oct. 22 " |
| " | 1 | 3/0 " | 10 " | ¼" " | Aug. 1, 1914 | Oct. 13, 1914 | Oct. 22 " |
| 26,400 | 1 | 1/0 " | 10 " | ¼" " | July 21, 1914 | Nov. 30, 1914 | Dec. 1 " |
| " | 1 | 1/0 " | 10 " | ¼" " | Sept. 15, 1914 | Nov. 30, 1914 | Dec. 1 " |
| " | 1 | 1/0 " | 10 " | ¼" " | July 13, 1914 | Nov. 30, 1914 | Dec. 1 " |
| 4,000 | 1 | 6 Copper | ..... | ¼" " | Aug. 17, 1914 | Nov. 30, 1914 | Dec. 18 " |
| " | 1 | 4 " | ..... | ¼" " | Aug. 17, 1914 | Nov. 30, 1914 | Dec. 1 " |
| on L.T. 90 | Poles | | | | | | |
| 4,000 | 1 | 6 " | ..... | ¼" " | Mar. 19, 1914 | Mar. 19, 1915 | Mar. 19, 1915 |
| 13,200 | 1 | 1/0 Alum | 10 Copper | ¼" " | June 10, 1914 | June 31, 1914 | July 3, 1914 |
| " | 1 | 3/0 " | 10 " | ¼" " | Sept. 1, 1914 | Nov. 30, 1914 | Nov. 30 " |
| " | 1 | 3/0 " | 10 " | ¼" " | Oct. 15, 1914 | Nov. 30, 1914 | Nov. 30 " |
| " | 1 | 3/0 " | 10 " | ¼" " | Sept. 29, 1914 | Nov. 30, 1914 | Nov. 30 " |
| " | 1 | 3/0 " | 10 " | ¼" " | Sept. 14, 1914 | Nov. 30, 1914 | Nov. 30 " |
| " | 1 | 2 S.R. " | 10 BWG Iron | ¼" " | Oct. 23, 1914 | Jan. 20, 1915 | Jan. 21, 1915 |
| " | 1 | 2 S.R. " | ..... | ..... | July 3, 1916 | ..... | ..... |
| on L.T. 18 poles 1 to 38, L.T. 19 poles 38 to 100 and L.T. 99. | | | | | | | |
| 12,000 | 2 | 4/0 Copper | 9 BWG Iron | ¼" Gal. Steel | Oct. 27, 1915 | Oct. 31, 1915 | Oct. 31 " |

Description of

NIAGARA

| Sec. No. | From | To | Length of Pole. | Span. | Miles | No. of Poles |
|---|---|---|---|---|---|---|
| | | | feet | feet | | |
| 101 | Kent Sta. Pole No. 40.... | Tilbury ..... | 30 | 132 | 16.91 | 85 |
| | | | | | 15.00 miles carried | |
| 102 | Kent Station..... | Junction No. 68 ..... | 40 | 120 | 1.48 | 68 |
| 102a | " ..... | Junction No. 68 ..... | ..... | ..... | 1.48 | ..... |
| 102b | " ..... | Junction Pole No. 68.... | ..... | ..... | 1.48 | ..... |
| 103 | Junction Pole 68, L.T. 102 | Junction Pole No. 519.... | 40 | 120 | 9.98 | 451 |
| 103a | " " 68 L.T. 102 | Junction Pole No. 519.... | ..... | ..... | 9.98 | ..... |
| 104 | " " 519 L.T. 103 | Wallaceburg ..... | 40 | 120 | 8.50 | 386 |
| 105 | " " 519 L.T. 103 | Dresden..... | 40 | 120 | 7.40 | 309 |
| 106 | " " 289 L.T. 8 | Embro..... | 35 | 132 | 6.10 | 254 |
| 107 | " " 564 L.T. 34 | Woodbridge..... | 35 | 132 | 6.44 | 277 |
| 108 | Woodbridge ..... | Bolton..... | 35-40 | 132 | 13.03 | 540 |
| 109 | Junction Pole ..... | W. T. & I.Ry ..... | ..... | ..... | .02 | 2 |
| 110 | Mimico Sub-Station ..... | Prison Brick Yard..... | 30 | 125 | .71 | 32 |
| 111 | Brant Sub-Station ..... | Junction Pole 249..... | 35-40 | 132 | 5.84 | 249 |
| 112 | Junction Pole 249 L.T. 111 | Burford..... | 35 | 132 | 3.48 | 142 |
| 113 | " " 249 L.T. 111 | Waterford ..... | 35-40 | 132 | 14.20 | 616 |
| 114 | Waterford..... | Simcoe ..... | 35 | 132 | 8.90 | 366 |
| 115 | Tilbury ..... | Comber..... | 30 | 132 | 7.26 | 306 |
| 116 | Delaware Sub-Station ... | Lambeth ..... | 40 | 120 | 6.58 | ..... |
| | | | | | Carried on | |
| 117 | " Junc. Pole 759,.. | Mount Brydges ..... | 40 | 120 | 4.60 | ..... |
| | | | | | Carried on | |
| 118 | Bertram's Sub-Station, Pole No. 69-L.T. 43.... | Dundas ..... | 55 | ..... | .37 | 21 |
| 119 | Junction Pole 759L. T. 96 | Delaware Sub-Station ... | 55 | 120 | .09 | 5 |
| | | | | | Lambeth & Mt. Brydges | |
| 121 | St. Thomas..... | Dutton ..... | 30 | 132 | 18.50 | 756 |
| 122 | Ridgetown..... | Highgate ..... | ..... | ..... | 6.18 | 9 |
| | | | | | These circuit carried on | |
| 123 | Junction Pole 68 L.T. 102 | Thamesville ..... | 35 | 132 | 14.60 | 683 |
| 124 | Junction Pole 676 L.T. 123 | Bothwell ..... | 35 | 132 | 9.83 | 410 |
| 125 | Stratford..... | Tavistock ..... | 35 | 132 | 9.72 | 398 |
| 126 | Junction Pole 68 L.T. 102 | Blenheim ..... | 35 | 132 | 9.52 | 390 |
| 127 | Junction Pole 469 L.T. 123 | Ridgetown..... | 35 | 132 | 8.02 | 333 |
| 128 | Brant ..... | St. George ..... | 30 | 132 | 9.09 | 369 |
| | | | | | 4.50 miles carried | |
| 129 | Dundas ..... | Lynden..... | 35 | 132 | 12.75 | 430 |
| 130 | Lucan..... | Ailsa Craig ..... | 30 | 132 | 10.14 | 410 |
| 131 | Dresden ..... | Petrolia ..... | 35-40 | 125 | 21.78 | 947 |
| 132 | Petrolia ..... | Wyoming Jct. Pole 220 .. | 40 | 125 | 4.85 | 220 |
| 133 | Wyoming Jct. Pole 220 .. | Perch Jct. Pole 562..... | 35 | 125 | 7.92 | 343 |
| 134 | Lucan ..... | Granton ..... | 30 | 132 | 6.95 | 246 |
| 135 | Perch Jct. Pole 562..... | Sarnia..... | 35 | 125 | 7.73 | 332 |
| 136 | Lucan ..... | Exeter ..... | 35 | 132 | 13.24 | 552 |
| 137 | Petrolia ..... | Wyoming ..... | 25 | 132 | e 7.50 | e 25 |
| 138 | Sebringville Junction Pole 311 L.T. 67 ..... | Milverton Jct. Pole 802.. | 35 | 132 | 11.90 | 491 |
| 139 | Milverton Jct. Pole 802.. | Milverton ..... | 35 | 132 | .96 | 40 |
| 140 | " " 802.. | Listowel Jct. Pole 1313 .. | 35 | 132 | 12.65 | 512 |
| 141 | Listowel Jct. Pole 1313.. | Listowell..... | 35 | 132 | 2.77 | 122 |
| 142 | " " 1313.. | Palmerston ..... | 35 | 132 | 10.48 | 431 |
| 143 | Palmerston ..... | Harriston ..... | 35 | 132 | 6.11 | 259 |
| 145 | Wyoming Jct. Pole 1963. | Forest..... | 35-40 | 132 | e20.50 | 817 |
| 146 | Stratford Sub ..... | Jt. Pole311 (Sebringville) | 40 | 120 | 6.81 | 311 |
| 147 | Jct. Pole 311(Sebringville) | Jct. Pole 648 (Mitchell).. | 40 | 120 | 7.61 | 337 |
| 148 | Jct. Pole 648 (Mitchell).. | Jct. Pole 1152 (Seaforth). | 40 | 120 | 11.36 | 505 |
| 149 | Jct. Pole 1152 (Seaforth) | Jct. Pole 1547 (Clinton).. | 40 | 120 | 8.84 | 395 |
| 150 | Jct. Pole 1547 (Clinton).. | Goderich ..... | 40 | 120 | 13.61 | 612 |
| 151 | Exeter ..... | Hensall ..... | 30 | 132 | e 5.04 | e 205 |
| 152 | Niagara Falls Sub ..... | Ont. Power Co. Line..... | 40 | 125 | .31 | 17 |

Lines—Continued

SYSTEM

| Voltage. | No. of Circuits | Power Cable B. & S. Gauge | Telephone Wires, B. & S. & B. W. G. Gauge | Ground Wire | Work Commenced | Work Completed | In Operation |
|---|---|---|---|---|---|---|---|
| 26,400 | 1 | 2 S.R. Alum | 10 BWG Iron | ¼" Gal. Steel | Jan. 13, 1915 | May 12, 1915 | Mar. 3,1915 |
| on H.T. Telephone Poles | | | | | | | |
| 26,400 | 1 | 1/0 " | 10 " | ¼" " | Oct. 28, 1914 | Feb. 3, " | Feb. 3, " |
| " | 1 | 3/0 " | ..... | ..... | June 22, 1915 | June 29, " | June 29 " |
| " | 1 | 3/0 " | ..... | ..... | Oct. 7, " | Oct. 13, " | Oct. 13 " |
| " | 1 | 1/0 " | 10 BWG Iron | ¼" Gal. Steel | Oct. 30, 1914 | Feb. 3, " | Feb. 3 " |
| " | 2 | 3/0 " | ..... | ..... | Oct. 12, 1915 | Mar. 15, 1916 | Mar.15,1916 |
| " | 1 | 1/0 " | 10 BWG Iron | ¼" Gal. Steel | Nov. 6, 1914 | Feb. 3, 1915 | Feb. 3 1915 |
| " | 2 | 3/0 " | 10 " | ¼" " | Nov. 3, " | May 1, " | Mar. 30 " |
| 13,200 | 1 | 1/0 " | 10 " | ¼" " | Oct. 1, " | Dec. 24, 1914 | Dec. 22,1914 |
| " | 1 | 1/0 " | 10 " | ¼" " | Sept.25, " | Oct. 21, " | Dec. 2 " |
| " | 1 | 1/0 " | 10 " | ¼" " | Oct. 20, " | Nov. 26, " | Jan. 26,1915 |
| " | 1 | 2 " | 10 " | ..... | Sep. 12, " | Sep. 12, " | Sep. 13,1914 |
| 2,200 | 1 | 2/0 Copper | ..... | ..... | Oct. 24, " | Feb. 17, 1915 | Feb. 17,1915 |
| 26,400 | 1 | 2 S.R. Alum | 10 BWG Iron | ¼" Gal. Steel | Nov. 6, " | May 4, " | May 6 " |
| " | 1 | 2 S.R. " | 10 " | ¼" " | Nov. 21, " | May 28, " | May 6 " |
| " | 1 | 2 S.R. " | 10 " | ¼" " | Nov. 21, " | May 5, " | May 10 " |
| " | 1 | 2 S.R. " | 10 " | ¼" " | Nov. 26, " | May 7, " | May 9 " |
| 4,000 | 1 | 1/0 Copper | ..... | ¼" " | Jan. 14, 1915 | May 8, " | Apr. 20 " |
| " | 1 | 6 Copper | ..... | ¼" " | Jan. 25, " | Mar. 12, " | Mar. 15 " |
| L.T. 96 poles | | | | | | | |
| 4,000 | 1 | 6 M.H.D. | ..... | ¼" " | Jan. 7, " | Jan. 23, " | Mar. 1 " |
| L.T. 97 poles | | | | | | | |
| 13,200 | 1 | 1/0 Alum | 10 BGW Iron | ¼" " | Feb. 25. " | Mar. 15, " | Mar. 15 " |
| " | 1 | 3/0 " | 10 " | ¼" " | Jan. 27, " | Mar. 9, " | Feb. 1 " |
| 4,000 v. circuit carried on L.T. 119 poles | | | | | | | |
| 13,200 | 1 | 1/0 Alum | ..... | ¼" " | May 3, " | Aug. 21, " | Aug. 27 " |
| 4,000 | 1 | 6 B.W.G.Iron | ..... | 6 B.W.G.Iron | Oct. 3, 1916 | Nov. 4, 1916 | Nov. 6,1916 |
| H.T. relay poles. | | | | | | | |
| 26,400 | 1 | 1/0 Alum | 9 BWG. Iron | ¼" Galv Steel | May 18, 1915 | July 14, 1915 | Sep. 14,1915 |
| " | 1 | 2 S.R. " | 9 " | ¼" " | June 26, " | Aug. 17, " | Aug. 17 " |
| " | 1 | 6 B.W.G.Iron | 9 " | 6 B.W.G.Iron | Sept. 9, " | Sep . 5, 1916 | Oct.26,1916 |
| " | 1 | 2 S. R. Alum | 9 " | ¼" Gal. Steel | July 2, " | Oct. 7, 1915 | Oct. 20,1915 |
| " | 1 | 2 " | 9 " | ¼" " | June 24, " | Sept. 7, " | Nov. 24 " |
| 4,000 | 1 | 2 " | 9 " | ¼" " | July 1, " | Aug. 17, " | Aug. 17 " |
| On H.T. Tel. and Relay line | | | | | | | |
| 13,200 | 1 | 2 S.R. Alum | 9 BWG. Iron | ¼" " | July 24, " | Oct. 15, " | Oct. 22 " |
| 4,000 | 1 | 2 S.R. " | ..... | ¼" " | July 28, " | Dec. 11, " | Dec. 15 " |
| 26,400 | 2 | 3/0 " | 9 BWG Iron | ¼" " | Aug. 30, " | Feb. 18, 1916 | Apl. 6,1916 |
| " | 2 | 3/0 " | 9 " | ¼" " | Mar 1, 1916 | Sep. 12, " | Nov. 10 " |
| " | 2 | 3/0 " | 9 " | ¼" " | Apl. 6, " | Sep. 29, " | Nov. 10 " |
| 4,000 | 1 | 6 Copper | ..... | 6 B.W.G.Iron | Apl. 6, " | May 27, " | June 29 " |
| 26,400 | 2 | 3/0 Alum | 9 B.WG. Iron | ¼"Galv. Steel | May 9, " | Nov. 4, " | Nov. 10 " |
| 13,200 | 1 | 3/0 " | 9 " | ¼" " | Nov. 26, 1915 | May 4, " | May 4 " |
| 4,000 | 1 | 6 Copper | 9 " | ..... | Sept. 1, " | Oct. 4, " | Oct. 4 " |
| 26,400 | 1 | 1/0 S.R.Alum | 9 BWG. Iron | ¼" Gal. Steel | Sept.20, " | May 15, " | May 18 " |
| " | 1 | 2 " | 9 " | ¼" " | Oct. 15, " | May 18, " | May 18 " |
| " | 1 | 1/0 " | 9 " | ¼" " | Oct. 13, " | May 22, " | May 27 " |
| " | 1 | 2 " | 9 " | ¼" " | Oct. 28, " | May 22, " | May 27 " |
| " | 1 | 1/0 " | 9 " | ¼" " | Oct. 14 " | June 6, " | June 6 " |
| " | 1 | 1/0 " | 9 " | ¼" " | Dec. 10, " | June30, " | June 30 " |
| " | 1 | 6 B.W.GIron | 9 " | ¼" " | June 26, " | ..... | ..... |
| " | 2 | 3/0 Alum | 10 Copper | ¼" " | Apl. 23, 1913 | June 4 ,1914 | Dec.23, 1914 |
| " | 2 | 3/0 " | 10 " | ¼" " | Apl. 23, " | June 4, " | Dec. 23 " |
| " | 2 | 3/0 " | 10 " | ¼" " | Apl. 23, " | June 4, " | Dec. 23 " |
| " | 2 | 3/0 " | 10 " | ¼" " | Apl. 23, " | June 4, " | Dec. 23 " |
| " | 2 | 3/0 " | 10 " | ¼" " | Apl. 23, " | June 4, " | Dec. 23 " |
| 4,000 | 1 | 6 Copper | ..... | 6 B.WG. Iron | Sept. 11,1916 | ..... | ..... |
| 12,000 | 2 | 2/0 " | ..... | ..... | Oct. 24, " | Nov. 1, 1916 | Nov. 5, 1916 |

## Description of

### SEVERN

| Sec. No. | From | To | Length of pole | Span | Miles | No. of Poles |
|---|---|---|---|---|---|---|
| S.L. | | | feet | feet | | |
| 1 | Waubaushene | Jct. Pole 193 (Coldwater). | 40 | 120 | 4.29 | 193 |
| 2 | Jct. Pole 193 (Coldwater). | Coldwater | 40 | 120 | 1.16 | 55 |
| 3 | " " 193 " | Jct. Pole 903 (Elmvale).. | 40 | 120 | 15.86 | 710 |
| 4 | " " 903 (Elmvale) .. | Elmvale | 40 | 120 | .42 | 19 |
| 5 | " " 903 " .. | Jct. Pole 1110 (Phelpston) | 40 | 120 | 4.55 | 207 |
| 6 | " " 1110 (Phelpston). | Barrie | 40 | 120 | 12.27 | 550 |
| 7 | " " 1110 " . | Jct. Pole 1785 (Stayner) .. | 40 | 120 | 15.07 | 675 |
| 8 | " " 1785 (Stayner)... | Stayner | 40 | 120 | 1.50 | 68 |
| 9 | " " 1785 " .. | Collingwood | 40 | 120 | 11.86 | 530 |
| 10 | Stayner | Creemore | 35 | 120 | 7.67 | 348 |
| 12a | Waubaushene Pole 540 ... | Victoria Harbor Jct. 730. | 35 | 100 | 3.59 | 190 |
| 14a | Victoria Harbor Jct. 730 . | Port McNicholl Jct. 969.. | 35 | 100 | 4.02 | 213 |
| 15 | Port McNicholl Jct. 969 . | Port McNicholl | 35 | 120 | .50 | 35 |
| 17 | Midland .... | Penetang | 40 | 120 | 4.50 | 223 |
| 20 | Port McNicholl Jct. 943 . | C.P.R. Elevators | 35 | 125 | 1.34 | 58 |
| 21 | Jct. Pole 1590 S.L 6 ..... | Camp Bordon | 35 | 132 | 14.34 | 604 |

### ST.L. ST. LAWRENCE

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Morrisburg | Prescott | 40 | 120 | 22.96 | 1,083 |
| 2 | " | Winchester | 40 | 120 | 16.29 | 747 |
| 3 | Winchester | Chesterville | 40 | 120 | 6.52 | 294 |
| 5 | Prescott | Brockville | 40 | 120 | 14.08 | 639 |
| 6 | Morrisburg | North Williamsburg | | | 6.50 | |
| This circuit carried on St. L. 2 poles | | | | | | |

### WASDELL'S FALLS

| W.L | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Wasdell's Falls | Jct. No. 1 Pole 1203 .... | 40 | 120 | 25.50 | 1,203 |
| 1a | " " | Junction Pole 183. | 40 | 120 | 3.94 | |
| | Carried on W.L. 1 Poles | | | | | |
| 2 | Jct. No. 1 Pole 1203 | Beaverton | 40 | 120 | 1.47 | 70 |
| 3 | Jct. No. 1 " 1203 | Cannington | 40 | 120 | 9.67 | 442 |
| 4 | Beaverton | Gamebridge | | | 6.50 | |
| | Carried on Sec. W.L. 1 & 2 poles | | | | | |
| 5 | Gamebridge | Brechin | | | 3.75 | |
| | Carried on Sec. W.L. 1 poles | | | | | |
| 6 | Cannington | Woodville | 30 | 120 | 5.15 | 147 |
| 7 | Cannington | Sunderland | 30 | 120 | 7.40 | 335 |
| 8 | Jct. Pole 183 W.L. 1 .... | Longford | 35 | 132 | 6.41 | 269 |

### EUGENIA FALLS

| EFL | | | feet | feet | | |
|---|---|---|---|---|---|---|
| 1 | Eugenia Falls Pwr. House | Chatsworth Sub-Station. | 40 | 125 | 22.15 | 972 |
| 2 | Chatsworth Sub-Station. | Owen Sound | 40 | 125 | 9.22 | 394 |
| 3 | Eugenia Falls | Flesherton | 40 | 125 | 6.78 | 296 |
| 4 | Flesherton Jct. Pole 296. | Durham Jct. Pole 964 ... | 40 | 125 | 15.97 | 687 |
| 5 | Durham Jct. Pole 964.... | Mount Forest | 40 | 125 | 15.70 | 692 |
| 6 | Laurel Jct | Grand Valley | 35 | 132 | e8.50 | 357 |
| 7 | Durham Jct. Pole 964.... | Hanover Jct. Pole 1491 .. | 40 | 125 | 12.09 | 526 |
| 8 | Hanover Jct Pole 1491 .. | Chesley | 40 | 125 | 11.06 | 473 |
| 9 | Flesherton Jct. Pole 296. | Dundalk | 40 | 125 | 11.73 | 500 |
| 10 | Dundalk | Shelbourne | 40 | 125 | 13.16 | 562 |

Lines.—Continued.

SYSTEM

| Voltage | No. of Circuits | Power Cable B. & S. Gauge | Telephone Wires. B.&S. & B.W.G. Gauge | Ground Wire | Work Commenced | Work Completed | In Operation |
|---|---|---|---|---|---|---|---|
| 22,000 | 2 | 4/0 Alum | 10 Copper | ¼" Gal. Steel | Sep. 20, 1912 | Feb. 18, 1913 | Feb. 24, 1913 |
| " | 1 | 2 " | " | ¼" " | Sep. 20, " | Feb. 18, " | Feb. 24 " |
| " | 2 | 4/0 " | " | ¼" " | Sep. 25, " | Feb. 18, " | Feb. 24 " |
| " | 1 | 2 " | " | ¼" " | Feb. 1, 1913 | May 17, " | May 27 " |
| " | 2 | 4/0 " | " | ¼" " | Oct. 20. 1912 | Feb. 18, " | Feb. 24 " |
| " | 2 | 2/0 " | " | ¼" " | Nov. 6, " | Apl. 5, " | April 6 " |
| " | 2 | 3/0 " | " | ¼" " | Oct. 23, " | Feb. 18, " | Feb. 24 " |
| " | 1 | 2 " | " | ¼" " | Jan. 24, 1913 | Apl. 26, " | Sep. 25 " |
| " | 2 | 3/0 " | " | ¼" " | Nov. 1, 1912 | Feb. 18, " | Feb. 24 " |
| 4,000 | 1 | 1/0 " | ..... | ¼" " | Aug. 15, 1914 | Oct. 25, 1914 | Oct. 21, 1914 |
| 22,000 | 2 | 1/0 " | 10 Copper | ¼" " | Apl. 1, 1916 | May 5, 1916 | July 24, 1916 |
| " | 2 | 1/0 " | " | ¼" " | Mar. 7 " | May 5 " | July 24 " |
| 4,000 | 1 | 1/0 " | " | ¼" " | Oct. 15, 1914 | Dec. 25, 1914 | Dec. 24, 1914 |
| 22,000 | 1 | 2 " | " | ¼" " | June 7, 1911 | July 18, 1911 | July 18, 1911 |
| " | 2 | 1/0 " | 9 B.W.G.Iron | ¼" " | Feb. 29, 1916 | Apl. 14, 1916 | July 24, 1916 |
| " | 1 | 6 Copper | 9 " " | 6 B.W.G.Iron | May 30 " | July 11, 1916 | June 29 " |

SYSTEM

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 26,400 | 1 | 3/0 Alum | 10 Copper | ¼" Gal. Steel | Oct. 29, 1912 | June 14, 1913 | Oct. 23, 1913 |
| " | 1 | 3/0 " | " | ¼" " | June 4, " | Dec. 15 1913 | Dec. 18 " |
| " | 1 | 3/0 " | " | ¼" " | Sept. 6, 1913 | Feb. 17, 1914 | Feb. 7, 1914 |
| " | 1 | 3/0 " | " | ¼" " | Oct. 16, 1914 | Mar. 20, 1915 | Apr, 4, 1915 |
| 2,200 | 1 | 6 Copper | ..... | ..... | Feb. 22, 1915 | Mar. 20, " | Mar. 20, 1915 |

SYSTEM

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 22,000 | 1 | 1/0 Alum | 10 Copper | ¼" Gal. Steel | Jan. 17, 1914 | Sept. 28, 1914 | Sep. 28, 1914 |
| " | 1 | 1/0 " | ..... | ..... | July 6, 1916 | July 23, 1916 | July 23, 1916 |
| " | 1 | 1/0 " | 10 Copper | ¼" Gal. Steel | Mar. 30, 1914 | Sep. 28, 1914 | Sep. 28, 1914 |
| " | 1 | 1/0 " | " | ¼" " | Feb. 18, " | Sep. 28 " | Sep 28 " |
| 4,000 | 1 | 1/0 " | ..... | ..... | May 2, " | ..... | Oct. 6 " |
| 4,000 | 1 | 1/0 " | ..... | ..... | July 25, " | ..... | Oct. 6 " |
| 4,000 | 1 | 1/0 " | ..... | ¼" Galv.Steel | May 19, " | ..... | Oct. 19 " |
| 4,000 | 1 | 1/0 " | ..... | ¼" " | June 1, " | July 10, 1914 | Oct. 19 " |
| 22,000 | 1 | 1/0 " | 9 B.W.G.Iron | ¼" " | Feb. 17, 1916 | May 27, 1916 | June 4, 1916 |

SYSTEM

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 22,000 | 2 | 3/0 Alum | 9 BWG. Iron | ¼"Galv.Steel | Mar. 17, 1915 | July 7, 1915 | Nov. 18, 1915 |
| " | 2 | 3/0 " | 9 " | ¼" " | Apr. 7, " | Sept. 24. " | Nov. 18 " |
| " | 2 | 3/0 " | 9 " | ¼" " | Apr. 10, " | July 21, " | Nov. 18 " |
| " | 2 | 3/0 " | 9 " | ¼" " | Apr. 13, " | July 11, " | Nov. 18 " |
| " | 2 | 3/0 " | 9 " | ¼" " | Apr. 26, " | Aug. 25, " | Nov. 18 " |
| " | 1 | 6 Copper | 9 " | ¼" " | July 21, 1916 | ..... | ..... |
| " | 1 | 3/0 Alum | 9 " | ¼" " | Oct. 19, 1915 | Aug. 19, 1916 | June 18, 1916 |
| " | 1 | 3/0 " | 9 " | ¼" " | Dec. 4 " | June 10, " | June 18 " |
| " | 1 | 1/0 " | 9 " | ¼" " | May 20 " | Aug. 14, 1915 | Nov. 18, 1915 |
| " | 1 | 1/0 " | 9 " | ¼" " | June 9 " | Aug. 24, " | Nov. 18 " |

Description of

EUGENIA FALLS

| Sec. No. | From | To | Length of pole | Span | Miles | No. of poles |
|---|---|---|---|---|---|---|
| 11 | Hanover Jct. Pole 1491.. | Hanover ..... | 40 | 125 | .76 | 34 |
| 12 | Eugenia Falls..... | Markdale..... | ..... | ..... | 6.50 | ..... |
| | | Car'd on Sec. EFL 1, poles | | | | |
| 13 | Eugenia Falls ..... | Flesherton..... | ..... | ..... | 7.50 | ..... |
| | | Car'd on Sec. EFL 3, poles | | | | |
| 14 | Durham Jct. 1326 E.F.L.5 | Holstein..... | 30 | 130 | 2.63 | 107 |
| | | Car'd on Sec. EFL 5, poles | | | | |
| 15 | Junction Pole 1190 ..... | Kilsyth Sta..... | 40 | 125 | e 6.25 | 244 |
| 16 | Kilsyth Station..... | Tara..... | 40 | 125 | e 7.25 | 311 |
| 17 | Shelbourne ..... | Orangeville ..... | 30 | 130 | e14.61 | e614 |
| 18 | " ..... | Horning's Mills ..... | 30 | 130 | e 5.13 | e215 |
| 19 | Eugenia Falls ..... | Meaford Jct. Pole 186... | 35–40 | 132 | 4.00 | 186 |
| 20 | Meaford Jct. Pole 186... | Collingwood ..... | 35–40 | 132 | 20.17 | 885 |
| 21 | Orangeville..... | Alton ..... | 30 | 132 | e 5.75 | e253 |
| 22 | Grand Valley ..... | Arthur ..... | 30 | 120 | e12.50 | e539 |

MUSKOKA

| | | | | | | |
|---|---|---|---|---|---|---|
| M L. 1 | South Falls..... | Huntsville ..... | 35 | 132 | 26.32 | 1,142 |

CENTRAL ONTARIO

| | | | | | | |
|---|---|---|---|---|---|---|
| C.O.S. 1607 (e) | Napanee..... | Newburgh (Houpt Paper Mills)..... | 30 | 132 | (e)8.25 | ..... |

(e) Estimated

## Lines.—Continued

SYSTEM.—Continued

| Voltage | No. of Circuits | Power Cable B. & S. Gauge | Telephone Wires, B.&S. & B.W.G. Gauge | Ground Wire | Work Commenced | Work Completed | In Operation |
|---|---|---|---|---|---|---|---|
| 22,000 | 1 | 1/0 S.R Alum | 9 B.W.G. iron | ¼" Galv. Steel | Aug. 18, 1916 | Sep. 16, 1916 | Sep. 16, 1916 |
| 4,000 | 1 | 2 S.R " | ..... | ..... | Dec. 28, 1915 | Jan. 17 " | Feb. 8 " |
| 4,000 | 1 | 2 S.R " | ..... | ..... | June 4 " | Aug. 16, 1915 | Nov. 18, 1915 |
| 4,000 | 1 | 2 S.R. " | ..... | ..... | Dec. 10 " | Apl. 3, 1916 | Apl. 3, 1916 |
| 22,000 | 1 | 6 B.W.G. iron | 9 B.W.G. iron | ¼" Galv. Steel | Oct. 12, 1916 | ..... | ..... |
| 4,000 | 1 | 6 Copper.... | 9 " | ¼" " | Oct. 12 " | ..... | ..... |
| 22,000 | 1 | 6 " .... | 10 " | ¼" " | June 13 " | June. 15. 1916 | June 13, 1916 |
| 22,000 | 1 | 6 " .... | 10 " | ¼" " | June 13 " | June 13 " | June 13 " |
| " | 1 | 1/0 " .... | 9 " | ¼" " | Aug. 21 " | Oct. 5 " | Oct. 6 " |
| " | 1 | 1/0 " .... | 9 " | ¼" " | Aug. 14 " | Oct. 5 " | Oct. 6 " |
| 4,000 | 1 | 4 " .... | ..... | 6 B.W.G. iron | Oct. 17 " | Nov. 22 " | Nov. 27 " |
| 4,000 | 1 | 4 " .... | ..... | 6 " | Oct. 30 " | ..... | ..... |

SYSTEM

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 22,000 | 1 | 2 S.R. Alum | 9 BWG. Galv. Iron | ¼" Galv. Steel | Aug. 6, 1915 | Apl. 29, 1915 | Aug. 15, 1916 |

SYSTEM

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4,000 | 1 | 6 Copper.. | ..... | 6 B.W.G. iron | Nov. 23, 1916 | | |

## The Mileage of Lines Tabulated According to Voltage and Number of Circuits

Transmission Lines

| — | Single Circuit Totals | | | Double Circuit Totals | | | Three Circuit Totals | | | Four Circuit Totals | | | 1-2-3-4-Circuit Totals | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915 to Oct. 31, 1916 | Under Construction to Oct. 31, 1916 | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915 to Oct. 31, 1916 | Under Construction to Oct. 31, 1916 | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915 to Oct. 31, 1916 | Under Construction to Oct. 31, 1916 | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915 to Oct. 31, 1916 | Under Construction to Oct. 31, 1916 | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915 to Oct. 31, 1916 | Under Construction to Oct. 31, 1916 | Completed to Oct. 31, 1916 |
| 46,000.. | 1.93 | ..... | ..... | ..... | ..... | ..... | 15.50 | ..... | ..... | ..... | ..... | ..... | 17.43 | ..... | ..... | 17.43 |
| 26,400.. | 182.29 | 54.59 | 20.50 | 95.55 | 12.77 | 7.73 | 11.46 | ..... | ..... | 1.10 | ..... | ..... | 290.40 | 67.36 | 28.23 | 357.76 |
| 22,000.. | 76.78 | 114.89 | 14.75 | 133.72 | 8.95 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 210.50 | 123.84 | 14.75 | 334.34 |
| 13,200.. | 277.31 | 13.24 | ..... | 88.54 | ..... | ..... | .09 | ..... | ..... | ..... | ..... | ..... | 365.94 | 13.24 | ..... | 379.18 |
| 12,000.. | ..... | ..... | ..... | 1.25 | ..... | .... .31 | ..... | ..... | ..... | ..... | ..... | ..... | 1.25 | ..... | .31 | 1.25 |
| 6,600.. | 13.00 | ..... | ..... | 3.75 | ..... | ..... | 2.04 | ..... | ..... | ..... | ..... | ..... | 18.79 | ..... | ..... | 18.79 |
| 4,000.. | 71.62 | 41.64 | 36.72 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 71.62 | 41.64 | 36.72 | 113.26 |
| 2,200.. | 18.54 | ..... | ..... | .63 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 19.17 | ..... | ..... | 19.17 |
| Total. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,241.18 |

## Total Mileage of Lines and Number of Poles

| — | To Oct. 31st, 1915 | Oct. 31st, 1915, to Oct. 31st, 1916 | Total to Oct. 31st, 1916 |
|---|---|---|---|
| Total mileage low tension lines | 1,092.13 | 229.06 | 1,321.19 |
| Total mileage low tension lines completed | 995.10 | 246.08 | 1,241.18 |
| Total mileage low tension lines under construction | 97.03 | 80.01 | 80.01 |
| Total mileage single circuit lines | 738.50 | 199.30 | 937.80 |
| Total mileage double circuit lines | 323.44 | 29.76 | 353.20 |
| Total mileage three circuit lines | 29.09 | ..... | 29.09 |
| Total mileage four circuit lines | 1.10 | ..... | 1.10 |
| Total mileage telephone lines complete | 864.11 | 211.94 | 1,076.05 |
| Total mileage telephone lines under construction | 86.89 | 50.23 | 50.23 |
| Number of poles | 41,203 | 13,169 | 54,372 |

NOTE.—Under total mileage low tension lines completed Oct. 31st, 1915, to Oct. 1916. 246.08 includes total mileage low tension under construction to Oct. 31st, 1915. 97.03.

## Total Weights and Mileages of Cable and Wire

### TRANSMISSION AND TELEPHONE LINES

| Cable and Wire | Wire Miles | | | | Weight in Pounds | | | |
|---|---|---|---|---|---|---|---|---|
| | Completed to Oct. 31st, 1915 | Completed Oct. 31st, 1915 to Oct. 31st, 1916 | Under construction to Oct. 31st, 1916 | Completed and under construction to Oct. 31st, 1916 | Completed to Oct. 31st, 1915 | Completed Oct. 31st, 1915 to Oct. 31st, 1916 | Under construction to Oct. 31st, 1916 | Completed and under construction to Oct. 31st, 1916 |
| Aluminum | 3,630.69 | 375.49 | 24.34 | 4,030.52 | 2,507,234 | 254,367 | 20,250 | 2,781,851 |
| Steel Reinforced Aluminum | 394.44 | 214.09 | ..... | 608.53 | 191,697 | 115,210 | ..... | 306,907 |
| Copper Wire | 313.96 | 253.93 | 123.93 | 691.82 | 651,296 | 208,606 | 67,653 | 927,555 |
| Copper Clad Steel Wire | 1,123.82 | 15.62 | ..... | 1,139.44 | 191,952 | 2,405 | ..... | 194,357 |
| Galv. Iron Wire | 606.94 | 426.69 | 209.21 | 1,242.84 | 171,705 | 249,944 | 91,608 | 513,257 |
| Galv. Steel Cable | 983.70 | 212.91 | 50.23 | 1,246.84 | 623,272 | 134,899 | 31,825 | 789,996 |
| Totals | 7,053.55 | 1,498.73 | 407.71 | 8,959.99 | 4,337,156 | 965,431 | 211,336 | 5,513,923 |

## Gauge, Length and Weight of Copper Clad Steel and Galvanized Iron Wire

TELEPHONE LINES

| Gauge | Wire Miles | | | | Weight in Pounds | | | | Single Circuit Mileage | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Completed to Oct. 31st, 1915 | Completed Oct. 31st, 1915 to Oct. 31st, 1916 | Under construction to Oct. 31st, 1916 | Completed and under construction to Oct. 31st, 1916 | Completed to Oct. 31st, 1915 | Completed Oct. 31st, 1915 to Oct. 31st, 1916 | Under construction to Oct. 31st, 1916 | Completed and under construction to Oct. 31st, 1916 | Completed to Oct. 31st, 1915 | Completed Oct. 31st, 1915 to Oct. 31st, 1916 | Under construction Oct. 31st, 1916 | Completed and under construction to Oct. 31st, 1916 |
| No. 8 B. & S., C.C. steel.. | 207.52 | ..... | ..... | 207.52 | 50,842 | ..... | ..... | 50,842 | 103.76 | ..... | ..... | 103.76 |
| No. 10 " " | 913.76 | 15.62 | ..... | 929.38 | 143,124 | 2,405 | ..... | 145,529 | 456.88 | 7.61 | ..... | 464.49 |
| No. 9 B.W.G. iron.. | 363.10 | 369.18 | 100.46 | 831.07 | 110,745 | 112,599 | 30,640 | 253,984 | 181.55 | 184.59 | 50.23 | 416.37 |
| No. 10 " " | 243.84 | 38.48 | ..... | 282.32 | 60,960 | 9,620 | ..... | 70,580 | 121.92 | 19.74 | ..... | 141.66 |
| Totals... | 1,728.22 | 423.28 | 100.46 | 2,250.29 | 365,671 | 124,624 | 30,640 | 520,935 | 864.11 | 211.94 | 50.23 | 1.126.28 |

## Gauge, Length and Weight of Conductors
### TRANSMISSION LINES

| Brown & Sharpe Gauge | Wire Miles | | | Weight Pounds | | | Miles Single Circuit Lines | | | Miles Double Circuit Lines | | | Total Single Circuit and Double Circuit Lines completed Oct. 31, 1916 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915, to Oct. 31, 1916 | Under construction to Oct. 31, 1916 | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915, to Oct. 31, 1916 | Under construction to Oct. 31, 1916 | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915, to Oct. 31, 1916 | Under construction to Oct. 31, 1916 | Completed to Oct. 31, 1915 | Completed Oct. 31, 1915 to Oct. 31, 1916 | Under construction to Oct. 31, 1916 | |
| 400,000 c.m. Alum. | 1.54 | ..... | ..... | 3,032 | ..... | ..... | .49 | ..... | ..... | ..... | ..... | ..... | .49 |
| 4/0 Aluminum. .... | 183.85 | ..... | ..... | 243,049 | ..... | ..... | ..... | ..... | ..... | 30.49 | ..... | ..... | 30.49 |
| 3/0 " .... | 1,846.43 | 195.07 | 24.34 | 1,536,229 | 162,298 | 20,250 | 181.11 | 36.39 | ..... | 201.43 | 12.77 | 7.73 | 431.70 |
| 2/0 " .... | 89.46 | ..... | ..... | 58,954 | ..... | ..... | ..... | ..... | ..... | 14.20 | ..... | ..... | 14.20 |
| 1/0 " .... | 876.33 | 168.68 | ..... | 458,320 | 88,219 | ..... | 189.51 | 35.65 | ..... | 44.30 | 8.95 | ..... | 278.41 |
| 2 " .... | 633.08 | 11.74 | ..... | 207,650 | 3,850 | ..... | 114.12 | 3.73 | ..... | 43.43 | ..... | ..... | 161.28 |
| 2 S.R " .... | 394.44 | 174.22 | ..... | 191,697 | 84,670 | ..... | 125.22 | 55.31 | ..... | ..... | ..... | ..... | 180.53 |
| 1/0 S.R " .... | ..... | 39.87 | ..... | ..... | 30,540 | ..... | ..... | 12.66 | ..... | ..... | ..... | ..... | 12.66 |
| 250,000 c.m. Copper | 1.54 | ..... | ..... | 6,246 | ..... | ..... | .49 | ..... | ..... | ..... | ..... | ..... | .49 |
| 4/0 Copper..... | 154.35 | ..... | ..... | 520,931 | ..... | ..... | ..... | ..... | ..... | 16.75 | ..... | ..... | 16.75 |
| 2/0 " ..... | 9.00 | ..... | .97 | 19,107 | ..... | 2,059 | 2.86 | ..... | ..... | ..... | ..... | .31 | 2.86 |
| 1/0 " ..... | 22.86 | 76.13 | ..... | 38,473 | 1,128,126 | ..... | 7.26 | 24.17 | ..... | ..... | ..... | ..... | 31.43 |
| 2 " ..... | 10.71 | ..... | ..... | 11,331 | ..... | ..... | 3.40 | ..... | ..... | ..... | ..... | ..... | 3.40 |
| 4 " ..... | 28.06 | 24.94 | 57.48 | 18,659 | 16,585 | 38,224 | 7.65 | 7.92 | 18.25 | .63 | ..... | ..... | 16.20 |
| 6 " ..... | 87.44 | 152.86 | 65 48 | 36,549 | 63,895 | 27,370 | 27.76 | 48.53 | 20.79 | ..... | ..... | ..... | 76.29 |
| 6 B.W.G. Iron .... | ..... | ..... | 103.73 | ..... | ..... | 59,698 | ..... | ..... | 32.93 | ..... | ..... | ..... | ..... |
| Totals..... | 4,339.09 | 843.51 | 252.00 | 3,350,227 | 560,677 | 147,601 | 659.87 | 224.36 | 71.97 | 351.23 | 21.72 | 8.04 | 1,257.18 |

NOTE.—A total of 16.00 miles occurs twice in the total mileage, due to there being circuits of different conductor on the same line.

## Total Mileage Low Tension Telephone Lines

COMPLETED AND UNDER CONSTRUCTION TO OCTOBER 31, 1916

| Sect. No. | Miles | Sect. No. | Miles | Sect. No. | Miles | Sect. No. | Miles | Sect. No. | Miles | Sect. No. | Miles | Sect. No. | Miles |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L.T. 1.. | 2.84 | L.T. 26 A | .24 | L.T. 58 | 6.42 | L.T. 96 | 6.58 | L.T. 128 | 9.09 | S.L. 1 | 4.29 | E.F.L 1 | 22.15 |
| " 2.. | 6.34 | " 27 | 11.24 | " 59 | 5.82 | " 97 | 4.00 | " 129 | 12.75 | " 2 | 1.16 | " 2 | 9.21 |
| " 3.. | 1.13 | " 28 | 1.27 | " 62 | 16.65 | " 98 | 9.27 | " 131 | 21.78 | " 3 | 15.86 | " 3 | 6.78 |
| " 4.. | .18 | " 29 | 1.50 | " 65 | 9.03 | " 99 | 19.18 | " 132 | 4.85 | " 4 | .42 | " 4 | 15.97 |
| " 5.. | 1.64 | " 30 | 1.27 | " 66 | 1.64 | " 100 | 1.25 | " 133 | 7.92 | " 5 | 4.55 | " 5 | 15.70 |
| " 6.. | .76 | " 31 | 1.56 | " 68 | 3.21 | " 101 | 16.91 | " 135 | 7.73 | " 6 | 12.27 | " 6 | E 8.50 |
| " 7.. | 12.27 | " 32 | .09 | " 69 | 6.66 | " 102 | 1.48 | " 136 | 13.24 | " 7 | 15.07 | " 7 | 12.09 |
| " 8.. | 9.90 | " 34 | 14.07 | " 71 | 10.93 | " 103 | 9.98 | " 137 | 7.50 | " 8 | 1.50 | " 8 | 11.06 |
| " 9.. | 11.12 | " 35 | .12 | " 72 | 6.48 | " 104 | 8.50 | " 138 | 11.90 | " 9 | 11.86 | " 9 | 11.73 |
| " 10.. | 10.30 | " 36 | 5.75 | " 73 | 5.00 | " 105 | 7.40 | " 139 | .96 | " 12 A | 3.59 | " 10 | 13.16 |
| " 11.. | 4.59 | " 38 | 7.35 | " 74 | 10.50 | " 106 | 6.10 | " 140 | 12.65 | " 14 A | 4.02 | " 11 | .76 |
| " 12.. | 1.13 | " 39 | .63 | " 75 | 1.93 | " 107 | 6.44 | " 141 | 2.77 | " 15 | .50 | " 15 | E 6.25 |
| " 13.. | 1.75 | " 40 | 1.50 | " 79 | .43 | " 108 | 13.03 | " 142 | 10.48 | " 17 | 4.50 | " 16 | E 7.25 |
| " 14.. | 2.04 | " 40 A | 1.92 | " 81 | 1.10 | " 109 | .02 | " 143 | 6.11 | " 20 | 1.34 | " 17 | E 14.61 |
| " 15.. | 2.08 | " 41 | 12.27 | " 82 | 2.27 | " 111 | 5.84 | " 145 | E 20.50 | " 21 | 14.34 | " 18 | E 5.13 |
| " 16.. | 3.75 | " 43 | 1.21 | " 83 | 1.30 | " 112 | 3.48 | " 146 | 6.81 | St. L. 1 | 22.96 | " 19 | 4.00 |
| " 17.. | .14 | " 45 | .09 | " 84 | 1.93 | " 113 | 14.20 | " 147 | 7.61 | " 2 | 16.29 | " 20 | 20.17 |
| " 18.. | .79 | " 46 | 2.22 | " 85 | 14.61 | " 114 | 8.90 | " 148 | 11.36 | " 3 | 6.52 | | |
| " 19.. | 1.54 | " 47 | 14.36 | " 86 | 1.18 | " 118 | .37 | " 149 | 8.84 | " 5 | 14.08 | | |
| " 20.. | 1.22 | " 48 | 5.87 | " 87 | 1.96 | " 119 | .09 | " 150 | 13.61 | W.L. 1 | 25.50 | | |
| " 21.. | 3.56 | " 49 | 3.79 | " 88 | 7.41 | " 123 | 14.60 | | | " 2 | 1.47 | | |
| " 22.. | 1.71 | " 50 | 4.98 | " 89 | 1.20 | " 124 | 9.83 | | | " 3 | 9.67 | | |
| " 23.. | .31 | " 55 | 1.68 | " 90 | 6.83 | " 125 | 9.72 | | | " 8 | 6.41 | | |
| " 24.. | 3.55 | " 57 | 1.93 | " 94 | 5.08 | " 126 | 9.52 | | | M.L. 1 | 26.32 | | |
| " 26.. | 2.74 | " 57 A | .08 | " 95 | 10.15 | " 127 | 8.02 | | | | | | |

"E" estimated

Total 1,126.28

## Size of Telephone Wire used on Telephone Lines

COMPLETED OCT. 31, 1915–OCT. 31, 1916

| Section No. | Mileage | Gauge | Section No. | Mileage | Gauge | Section No. | Mileage | Gauge |
|---|---|---|---|---|---|---|---|---|
| | | No. | | | No. | | | No. |
| L.T. 125 | 9.72 | 9 B.W.G. Iron | S.L.12 A | 3.59 | 10 B.&S.C.C.Steel | E.F.L.17 | 14.61 | 10 B.W.G. Iron |
| " 132 | 4.85 | " " | " 14 A | 4.02 | " | " 18 | 5.13 | " " |
| " 133 | 7.92 | " " | | | | | | |
| " 136 | 13.24 | " " | | | | | | |
| " 137 | 7.50 | " " | | | | | | |
| " 138 | 11.90 | " " | | | | | | |
| " 139 | .96 | " " | | | | | | |
| " 140 | 12.65 | " " | | | | | | |
| " 141 | 2.77 | " " | | | | | | |
| " 142 | 10.48 | " " | | | | | | |
| " 143 | 6.11 | " " | | | | | | |
| E.F.L. 7 | 12.09 | " " | | | | | | |
| " 8 | 11.06 | " " | | | | | | |
| " 11 | .76 | " " | | | | | | |
| " 19 | 4.00 | " " | | | | | | |
| " 20 | 20.17 | " " | | | | | | |
| W.L. 8 | 6.41 | " " | | | | | | |
| M.L. 1 | 26.32 | " " | | | | | | |
| S.L. 20 | 1.34 | " " | | | | | | |
| " 21 | 14.34 | " " | | | | | | |
| Total | 184.59 | ..... | Total. | 7.61 | ..... | Total. | 19.74 | |

## Size of Telephone Wire used on Telephone Lines

UNDER CONSTRUCTION OCT. 31, 1916

| Section No. | Mileage | Gauge | Section No. | Mileage | Gauge |
|---|---|---|---|---|---|
| | | No. | | | No. |
| L.T. 135.... | 7.73 | 9 B.W.G. Iron. | E.F.L. 6... | 8.50 | 9 B.W.G. Iron. |
| " 145.... | 20.50 | " " | " 15... | 6.25 | " " |
| | | | " 16... | 7.25 | " " |
| Total..... | 28.23 | | Total..... | 50.23 | |

# SECTION III

## OPERATION OF THE SYSTEMS

### NIAGARA SYSTEM

The operation of the Niagara System for the year 1916, was attended with gratifying success. In no other year, and especially since the war commenced, have the lines and apparatus of this system been called upon for such extraordinary duty. This condition was occasioned by the rapid recovery of industry together with the enormous development of the manufacture of war munitions in Canada.

During the months of November to April, inclusive, and from July to October, power was purchased for transformation and transmission from two, and indirectly three sources, the supplying plants being linked together by the Commission's Transforming Station at Niagara Falls. On April 30th, the temporary contract with the Toronto Power Company expired, and from this date until July 26th, when the first generating unit from the Canadian Niagara Power Company was connected, the total load of the Niagara System was carried by the Ontario Power Company. On August 21st, a second unit at the Canadian Niagara Power Company's Plant was parallelled with the first, and from this date until the end of October, the amount of power available from this company amounted to approximately 25,000 horse-power. As these generating stations were operating at maximum capacity, extreme caution was necessarily exercised in the operation of the system in order to preserve equilibrium at all times. Due credit is extended to the Ontario Power Company for the satisfactory service received during the year.

Electrical storms during the past year were much more frequent and severe than in previous years. The Niagara System was subjected to these storms on sixty different days. On eight days these storms traversed practically the entire system, and were particularly severe. The balance of the storms traversed only portions of the system, mainly in the Niagara Peninsula, Preston, Stratford and Chatham Districts, and were more or less severe. No total system interruption occurred from lightning causes during the summer, and when it is considered that the Commission has in operation approximately 1,200 miles of high and low tension lines overstreching a strip of Ontario approximately 215 miles long and averaging 60 miles wide, all lines being subjected to the accumulation of electrical discharges, which must be dissipated by passage to ground, the efficiency of the protective apparatus is strikingly evident.

Work of a special nature carried out by the Line Maintenance Department, and required by reason of the rapid increase of load, included the erection of a temporary 12,000 volt double circuit pole line of No. 4/0 copper conductor between the power house of the Canadian Niagara Company's station and a point (on the present line between the Hydro and Toronto Power Company Transforming Stations) approximately 1,800 feet south of the Commission's station. Both circuits of this pole line are still in service pending the installation of the balance of the underground feeders to the Canadian Niagara Power Company's plant.

The erection of a fourth No. 4/0 copper, three-phase circuit 15.5 miles long, on the 46,000 volt tower line between Niagara Falls and Welland was completed and placed in operation.

The single or three-phase circuit of No. 2 aluminum between the High Tension station and the Municipal Station at Dundas was replaced with a double circuit of No. 4 copper. Two 13,200 volt air break switches were erected in these

CURVE SHOWING
MONTHLY INCREASE
OF POWER LOAD
OF MUNICIPALITIES
NIAGARA SYSTEM
OCT. 1910 to OCT. 1916

H. E. P. C.
ONTARIO

Horse-Power

120000
100000
80000
60000
40000
20000

1910 Oct Nov Dec 1911 Jan Feb Mar April May June July Aug Sept Oct Nov Dec 1912 Jan Feb Mar April May June July Aug Sept Oct Nov Dec 1913 Jan Feb Mar April May June July Aug Sept Oct Nov Dec 1914 Jan Feb Mar April May June July Aug Sept Oct Nov Dec 1915 Jan Feb Mar April May June July Aug Sept Oct Nov Dec 1916 Jan Feb Mar April May June July Aug Sept Oct

lines at the entrance to the John Bertram and Sons Foundry, and also near the Dundas Municipal Station for the control of the line of the village of Lynden. The wood pole line from the Dundas High Tension to the City of Hamilton, which was replaced by a steel tower line during the summer of 1915, was taken down, and the material placed in stock.

Short stretches of single circuit 26,400 volt lines were constructed to supply the Lake Erie and Northern Railway Company's sub-stations at Brantford and Simcoe, from the outgoing circuits of Brant High Tension Station. This work also included the erection of telephone lines and instruments, and the installation of an air break switch at the Company's Simcoe sub-station.

The wood pole Low Tension Line entrances at London and St. Thomas, and at the Weston Municipal sub-station were remodeled to accommodate new lines erected in these districts. In view of the many new customers added in the Stratford District, and the length of line necessary to serve them, it has been decided to raise the transmission voltage in this district from 13,200 to 26,400. To this end considerable re-arranging of the power and telephone lines was carried out in preparation for this change. For sectionalizing purposes two air break switches were erected at Mitchell in the double circuit line between Stratford and Seaforth. The telephone line between Stratford and Sebringville Junction was doubled by the erection of a circuit of No. 9 iron wire.

Some re-location of the 13,200 volt line feeding the Mimico Distribution Station from the Cooksville High Tension Station was necessary, due to the construction of the Toronto-Hamilton Highway. The portion of line affected extended from Port Credit to New Toronto.

A twenty-five "pair" lead covered telephone cable approximately 13,500 feet long, was installed between the High Tension Station and the Commission's new office building at Toronto. The cable was laid in the Toronto Hydro-Electric System duct line to the corner of Queen and William Streets and from thence to the office building on the concrete poles.

Few failures of any of the electrical or mechanical equipment of the High Tension stations occurred during the year. As the Commission, in common with other enterprises in Canada, was severely handicapped in obtaining delivery on additional apparatus required to cope with the abnormal demand for power, the present equipment in some of the stations was subjected to overload for short periods, but without any depreciating results. The difficulty, mentioned above was partially met by the transfer, where feasible, of transformers from one station to another. One of the more important changes of this nature was the transfer of two 750 kv-a transformers from Guelph to the St. Thomas station.

The Commission now employs a staff of nine highly trained meter experts whose regular duties consist of the periodic calibration and adjustment of the various types of graphic recording and indicating instruments located in the Commission's stations.

These men also attend to the setting and adjustment of all relays used to protect the Commission's lines and equipment.

Considerable time has been spent in perfecting refinements in connection with the measurement of power, which has been to a great extent apparently considered unnecessary heretofore by the majority of other organizations. These refinements extend from the periodic comparison of the Commission's portable standard meters with ultimate standards to the determination of the characteristics of instrument transformers of various types.

The services of the meter inspectors may also be requisitioned by any of the Commission's customers to inspect or adjust metering and relay equipment, or to conduct special measurements of any loads with regard to which the customer is desirous of obtaining particular information.

A long felt want was realized in the erection of the storehouses on the High Tension Station ground during the summer. These buildings will accommodate maintenance materials of a bulky nature. This work, together with the building of suitable approaches, was done under the supervision of the operators. Outside lights surmounting concrete poles were installed at Dundas, London and Kent High Tension Stations, with pleasing effect. Considerable improvement in appearance was accomplished in grading the grounds surrounding the High Tension Stations, and re-surfacing of the roads through the grounds from the highway.

A concrete roadway approximately 300 feet long and 6 inches thick, was laid across the flats at Preston, from the fair grounds to the Hydro-Electric Power Commission's Property. It is expected that this roadway will be unaffected by the heavy spring floods in this vicinity, which previously rendered impassable the original gravel topped roadway. An increase was made in the supply of cooling water for this station by the sinking of a well just outside the station, and the installation of a deep well pump for pumping the water directly into the cooling system. The supply originally obtained from the small creek in the flats had latterly become inadequate.

The tables given below show the load demands of the various municipalities as well as the increase during the year.

The plotted curve on another page shows the monthly increase in the load supplied from October, 1910, to October, 1916.

## NIAGARA SYSTEM

Capital Investments of the Niagara System in operation at October 31st, 1916:

| | |
|---|---|
| Right-of-Way | $1,034,920 58 |
| Steel Tower Transmission Lines | 3,403,585 05 |
| Telephone Lines | 129,706 69 |
| Relay System Lines | 54,537 32 |
| Conduit System (Ontario Power Co. to Niagara Station) | 96,698 64 |
| Wood Pole Lines | 1,785,208 01 |
| Transformer Stations | 2,797,209 61 |
| Distributing Stations | 221,130 02 |
| Total Operating Capital | $9,522,995 92 |

Total expenditures in connection with the operation and maintenance of Niagara System for the Fiscal year 1915-16:

| | | |
|---|---|---|
| Operators' Salaries and Expenses, including Supplies | | $92,521 66 |
| Maintenance of Steel Tower Lines | | 68,792 04 |
| " Telephone and Relay Lines | | 15,422 41 |
| " Low Tension Lines | | 20,350 09 |
| " Transformer Stations | | 68,883 54 |
| " Distributing Stations | | 7,514 28 |
| Administration | | 44,811 77 |
| | | $318,295 79 |
| Interest on Invested Capital | $371,404 94 | |
| Cost of Power at Niagara Falls | 997,257 60 | |
| | | 1,368,662 54 |

Summary of Financial Statement of the Niagara System operation for fiscal year 1915-16:

### Receipts

| | |
|---|---|
| Power delivered, including charges for Administration, General Expense, Operation, Maintenance and Interest | $2,038,792 32 |

### Disbursements

| | |
|---|---|
| Power purchased, including losses in Transmission and Transformation, Administration, General Expense, Operation, Maintenance and Interest | 1,686,958 33 |
| Surplus applicable to Sinking Fund and Depreciation Reserve Account | $351,833 99 |

| Municipality | Load in H.P. Oct., 1915. | Load in H.P. Oct., 1916. | Increase in H.P. |
|---|---|---|---|
| Toronto | 32,748 | 38,465 | 5,717 |
| Dundas | 362 | 548 | 186 |
| Hamilton | 7,694.5 | 8,562 | 867.5 |
| Waterdown | 63 | 71 | 8 |
| Caledonia | 40.2 | 55 | 14.8 |
| Hagersville | 106 | 97.8 | ..... |
| London | 5,971.5 | 7,359 | 1,377.5 |
| Thorndale | 28.4 | 34.8 | 6.4 |
| Thamesford | 19.3 | 26.5 | 7.2 |
| Guelph | 1,954.5 | 2,549.5 | 595 |
| Ontario Agricultural College | 153 | 160 | 7 |
| Central Prison Farm | 203.5 | 203.5 | ..... |
| Rockwood | 34.2 | 11.9 | ..... |
| Georgetown | 266.5 | 300 | 33.5 |
| Acton | 84.5 | 70.3 | ..... |
| Preston | 973 | 1,149 | 166 |
| Galt | 1,602 | 2,285.5 | 683.5 |
| Hespeler | 368.5 | 450.4 | 81.9 |
| Breslau | 21.5 | 30 | 8.5 |
| Kitchener | 2,285.5 | 3,262 | 976.5 |
| Waterloo | 717 | 815 | 98 |
| Elmira | 91 | 109.9 | 18.9 |
| New Hamburg | 84.5 | 76.4 | ..... |
| Baden | 157 | 196.5 | 39.5 |
| Stratford | 1,179.5 | 1,448 | 268.5 |
| Mitchell | 123.5 | 148.8 | 25.3 |
| Seaforth | 275 | 387.4 | 112.4 |
| Clinton | 98 | 101.8 | 3.8 |
| Goderich | 217 | 214.5 | ..... |
| St. Mary's | 339 | 434.3 | 95.3 |
| Woodstock | 1,048 | 1,170 | 122 |
| Ingersoll | 740 | 792 | 52 |
| Tillsonburg | 233 | 242.6 | 9.6 |
| Norwich | 100.5 | 171.6 | 71.1 |
| Beachville | 132.5 | 96.5 | ..... |
| St. Thomas | 1,658.5 | 2,011 | 352.5 |
| Port Stanley | 68.5 | 75 | 6.5 |
| Brantford | 1,552.5 | 1,783 | 230.5 |
| Paris | 381 | 398 | 17 |
| Port Credit | 57.5 | 59.6 | 2.1 |
| Weston | 178.5 | 197 | 16.5 |
| Brampton | 539 | 656.8 | 117.8 |
| Milton | 287 | 355 | 68 |
| Mimico | 127.5 | 156.1 | 28.6 |
| Mimico Asylum | 35 | 31.5 | ..... |
| Prov. Brick Yard | 171 | 136 | ..... |
| New Toronto | 80.5 | 291 | 210.5 |
| Toronto Township | 62.5 | 99.1 | 36.6 |
| Cooksville<br>Dixie | 23 | 22.7 | ..... |
| Windsor | 216 | 1,502.6 | 286.6 |
| Walkerville | 777.5 | 1,576.5 | 799 |
| Elora | 51.6 | 77.7 | 26.1 |
| Fergus | 68.5 | 92.5 | 24 |
| Welland | 3,038.5 | 5,626 | 2,587.5 |
| St. Catharines | 2,158.5 | 2,433 | 274.5 |
| Port Dalhousie | 104.5 | 79 | ..... |
| Strathroy | 143.5 | 203.7 | 60.2 |
| Drumbo | 18 | 10.9 | ..... |
| Plattsville | 32.2 | 57.6 | 25.4 |
| Woodbridge | 32.2 | 76.4 | 44.2 |
| Ayr | 35.5 | 36.2 | .7 |
| Princeton | 9.8 | 10.4 | .6 |
| Embro | 25 | 28.1 | 3.1 |
| Chatham | 431.5 | 509.4 | 67.9 |

| Municipality. | Load in H.P. Oct., 1915. | Load in H.P. Oct., 1916. | Increase in H.P. |
|---|---|---|---|
| Lucan | 33.5 | 30.2 | ..... |
| Bolton | 34.8 | 95.2 | 60.4 |
| Mount Brydges | 26 | 26.8 | .8 |
| Wallaceburg | 177 | 277.5 | 100.5 |
| Delaware | 7.2 | 8.9 | 1.7 |
| Tilbury | 60.3 | 63 | 2.7 |
| Simcoe | 114 | 103.2 | ..... |
| Waterford | 35 | 97.8 | 62.8 |
| Lambeth | 50.9 | 17.9 | ..... |
| Grantham Township | 12.3 | 17.4 | 5.1 |
| Dresden | 70 | 68.3 | ..... |
| Dorchester | 20.7 | 16 | ..... |
| Comber | 19.5 | 21.4 | 1.9 |
| Burford | 45.6 | 31.5 | ..... |
| Bothwell | 28 | 28.1 | ..... |
| St. George | 45.6 | 38.2 | ..... |
| Dutton | 47 | 44.9 | ..... |
| Thamesville | 52.9 | 45 | ..... |
| Blenheim | 53.6 | 77.7 | 24 |
| Lynden | 6.7 | 79.7 | 73.1 |

A list of the municipalities connected to the Niagara System during the last year is given below.

| Municipality. | Date connected | Initial Load in H.P. | Load in H.P. Oct., 1916 | Increase in H.P. |
|---|---|---|---|---|
| Ailsa Craig | Dec. 15th, 1915 ..... | 15.3 | 16 | .7 |
| Niagara Falls | Dec. 19th, 1915 ..... | 371.3 | 2,364.5 | 1,993.2 |
| Otterville | Jan. 15th, 1916 ..... | 10 | 11.7 | 1.7 |
| Petrolea | Apr. 25th, 1916 ..... | 134 | 146 | 12 |
| Exeter | May 4th. 1916 ..... | 57 | 77.7 | 20.7 |
| Milverton | May 18th 1916 ..... | 26.5 | 33.5 | 7. |
| Listowel | May 27th. 1916 ..... | 90.3 | 117.9 | 27.6 |
| Palmerston | June 6th, 1916 ..... | 83.7 | 93 | 9.3 |
| Granton | June 29th, 1916 ..... | 10 | 12.4 | 2.4 |
| Harriston | June 30th. 1916 ..... | 56.3 | 52.9 | ..... |
| Wyoming | Oct. 4th, 1916 ..... | 22.7 | 22.7 | ..... |
| Wellesley | Oct. 23rd, 1916 ..... | 13.4 | 13.4 | ..... |
| Burgessville | Oct. 26th, 1916 ..... | 8 | 8 | ..... |
| Tavistock | Oct. 26th, 1916 ..... | 28 | 28 | ..... |

## SEVERN SYSTEM

The Commission's generating station at the Big Chute on the Severn River was overtaxed toward the middle of the fiscal year by the relatively large increase of the power demand of this district, as on the Niagara System, the increase in load resulting from the same cause. The steps taken to remedy this condition will be mentioned later.

The operation of the generating station, sub-stations and transmission lines was very satisfactory and the increased load was taken care of in a very creditable manner. The Trent Valley Canal contractors completed certain work on the canal scheme in the vicinity of the generating station which greatly benefited the control of the head and tail water at this plant. Other special maintenance work was carried out by which the hydraulic regulation was improved.

A slight change was effected in the construction of the power and telephone lines of the Power House-Waubaushene Section where these lines cross Matcheash Bay, by the erection of an "A" frame structure with rock crib foundation to shorten this long span. This has eliminated trouble which was previously experienced at this point during very severe wind storms.

The temporary 22,000-volt pole type interswitching station at Waubaushene was moved to a new location on the Commission's property and altered slightly in design. The change was made to accommodate additional lines built from this point and for more efficient control of all lines from this operating centre.

The work commenced in October, 1915, on the stringing of a second telephone circuit between Waubaushene and the power house was completed and placed in operation in the late fall. The additional rod of right-of-way acquired on each side of the line from Midland to Penetang was cleared of trees through the bush section of that line.

Two new customers were connected to the Severn System lines during the year. Camp Borden, the new military training grounds prepared by the Department of Militia and Defence, was first supplied with power on June 29th, when the water pumps and the camp lighting was put in operation. The camp sub-station is fed over a single circuit of No. 6 copper tapped by means of airbreak switches on to the main transmission lines near the Barrie sub-station.

The elevator of the Canadian Pacific Railway at Port McNicoll was first supplied with Hydro power on July 25th. The Company's station is fed from a double circuit of No. 1/0 aluminum from the Midland-Penetang main line, which was double circuited from Waubaushene to this point during the summer. This company is being supplied with approximately 1,000 h.p. of off peak power at 575 volts during the season of navigation, in addition to approximately 250 h.p. for the operation of wharf machinery, lighting, etc., which will be utilized throughout the entire year. Below will be found a list of the demands of the various municipalities in October, 1915 and 1916, and the increase during the year.

## SEVERN SYSTEM

| Municipality | Load in H.P. Oct., 1915 | Load in H.P. Oct., 1916. | Increase in H.P. |
|---|---|---|---|
| Midland | 500 | 815 | 315 |
| Penetang | 415.5 | 495 | 79.5 |
| Collingwood | 572.4 | 888.7 | 316.3 |
| Barrie | 368.6 | 541.5 | 72.9 |
| Coldwater | 37.5 | 34.8 | ..... |
| Elmvale | 34.8 | 36.2 | 1.4 |
| Stayner | 81.7 | 56.3 | ..... |
| Creemore | 48.2 | 38.8 | ..... |
| Orillia | 1239.9 | 1414 | 174.1 |
| Waubaushene | 18.1 | 16.8 | ..... |
| Port McNicoll | 23.4 | 19.3 | ..... |
| Victoria Harbor | 29.5 | 26.8 | ..... |

### New Stations on Severn System

| Customer | Date connected | Initial load in H.P. | Present load in H.P. | Increase in H.P. |
|---|---|---|---|---|
| Camp Borden, | June 29th,1916 | 225 | 325.7 | 100.7 |
| C.P.R. Elevator | July 25th, 1916 | 600 | 1176.6 | 576.6 |

OPERATING STATEMENT, FISCAL YEAR 1915-16.

Capital Investment as at October 31st, 1916:

| | |
|---|---|
| Big Chute Power Development, including Generating and Transformer Station | $349,787 46 |
| Transmission Lines | 335,497 20 |
| Distributing Stations | 78,451 08 |
| Total Operating Capital | $763,735 74 |

### Revenue as per details below

| | | |
|---|---|---|
| Midland Power Accounts | $10,856 88 | |
| Penetang " | 11,983 47 | |
| Collingwood " | 23,613 38 | |
| Barrie " | 13,970 30 | |
| Coldwater " | 1,007 77 | |
| Elmvale " | 1,335 50 | |
| Stayner " | 2,800 01 | |
| Creemore " | 2,254 47 | |
| Orillia " | 13,229 32 | |
| Waubaushene " | 640 19 | |
| Port McNichol " | 698 22 | |
| Victoria Harbor " | 1,762 98 | |
| Camp Borden " | 3,592 45 | |
| C.P.R. Elevator " | 6,949 99 | |
| | | $94,694 93 |

### Expenditures

| | | |
|---|---|---|
| Operators' and Patrolmen's Salaries and Expenses and proportion of Administration and General Office Expense | $18,152 30 | |
| Cost of Power purchased from Wasdell and Eugenia Systems | 6,366 26 | |
| Interest on Capital Investment | 29,920 27 | |
| | | $54,438 83 |
| Surplus applicable to Sinking Fund and Depreciation Reserve Accounts | | $40,256 10 |

## EUGENIA SYSTEM

The second generating station which the Commission has constructed was placed in official operation by Sir Adam Beck on November 18th when the municipalities of the Eugenia System received Hydro power for the first time. The service supplied on this system has quite fulfilled the Commission's expectations in every way.

The hydraulic and electrical features of the generating station have been given detailed description in previous reports.

The transmission system now comprises 195 miles of 22,000-volt and 24 miles of 4,000-volt lines. The municipalities now served on this system are Owen Sound, Mount Forest, Durham, Dundalk, Flesherton, Chatsworth, Markdale, Holstein and Chesley.

On June 13th a part of the Pine River System which was acquired by the Commission was connected to the Eugenia System by means of a thirty mile tie line built between Dundalk and Shelburne. The municipalities thus supplied were Orangeville, Shelburne and Horning's Mills. While satisfactory service was delivered since the acquisition of this system, the Commission is taking steps to place it on a par with the operating condition of the balance of the Eugenia System. This will consist of the erection of new sub-stations at Shelburne and Orangeville and complete renovation of the 22,000-volt lines between these points. The future outlook for this portion of the Eugenia System is very bright.

The actual operation and maintenance of the Eugenia System is carried on jointly by co-operation with the municipalities supplied. The success of this scheme was no exception to that enjoyed on the other northern systems.

Below will be found a tabulation showing the date of connection, initial load and load taken in October, 1916, of the municipalities on this system.

Eugenia System

| Municipality | Date connected | Initial load in H.P. | Load in H.P. Oct. 1916 | Increase in H.P. |
|---|---|---|---|---|
| Owen Sound | November 18th, 1915. | 899.5 | 992. | 92.5 |
| Flesherton | " " | 29.5 | 36.2 | 6.7 |
| Dundalk | " " | 50.9 | 50.2 | ..... |
| Durham | " " | 81.7 | 63.9 | ..... |
| Mt. Forest | " " | 156 | 98.5 | ..... |
| Chatsworth | December 17th, 1915. | 8 | 25.4 | 17.4 |
| Markdale | November 18th, 1915. | 67 | 60 | ..... |
| Holstein | April 3rd, 1916..... | 6.8 | 16.9 | 10.1 |
| Chesley | June 18th, 1916 ..... | 87 | 80.4 | ..... |
| Shelburne | " 13th " ..... | 45 | 51.2 | 6.2 |
| Orangeville | " 13th " ..... | 60 | 128.7 | 68.7 |
| Horning's Mills | " 13th " ..... | 5 | 5 | ..... |

## EUGENIA SYSTEM

OPERATING STATEMENT, FISCAL YEAR 1915-16.

Capital Investment as at October 31st, 1916:

| | |
|---|---|
| Eugenia Falls Power Development and Generating Plant | $638,854 14 |
| Eugenia Distributing Stations | 51,944 33 |
| Eugenia Transmission Lines | 409,355 93 |
| Total Operating Capital | $1,100,154 40 |

### Revenue as per details below

| | | | | |
|---|---|---|---|---|
| Owen Sound Power Accounts, | December to October | | $22,536 94 | |
| Flesherton | " | " | 733 13 | |
| Dundalk | " | " | 1,232 32 | |
| Durham | " | " | 1,825 00 | |
| Mount Forest | " | " | 3,226 07 | |
| Chatsworth | " | January " | 662 70 | |
| Markdale | " | March " | 933 36 | |
| Holstein | " | May " | 185 96 | |
| Chesley | " | July " | 1,076 01 | |
| Orangeville | " | " " | 979 12 | |
| Shelburne | " | " " | 500 50 | |
| Hanover | " | September 16 to October 31 | 188 12 | |
| Severn System | " | October 6 to October 31 | 2,520 13 | |
| Hornings Mills | " | | 70 17 | |
| | | | | 36,669 53 |

### Expenditures

| | | |
|---|---|---|
| Operators' and Patrolmen's Salaries and Expenses and proportion of Administration and General Office Expenses | $14,584 03 | |
| Interest on Capital Investment | 34,205 94 | |
| | | 48,789 97 |
| Deficit on operation | | 12,120 44 |

## WASDELLS SYSTEM

While the power demand of the municipalities fed from the Wasdells System does not indicate the same growth which characterized the operation of some of the other systems, very satisfactory progress was maintained. A thoroughly reliable and continuous service was provided. The power house, transmission lines, and sub-stations required no extensive repairs and are in first-class operating condition.

The excess capacity available at the power house over what was required for serving the Wasdells System was very conveniently and economically utilized to take care of the increased power demand of the municipalities of the Severn System.

A tie line between the power house and the Orillia substation at Longford, constructed during the summer, made this arrangement possible, and after parallel operation was commenced on July 24th, the Wasdells power house supplied an average load of 750 h.p. continuously throughout the balance of the year without difficulty. Thus the Big Chute generating station was relieved of the greater part of the power demand of the municipality of Orillia, at Orillia and at Longford.

### Wasdells System

| Municipality | Load in Oct., 1915 H.P. | Load in Oct., 1916 H.P. | Increase in H.P. |
|---|---|---|---|
| Beaverton | 54.9 | 56.3 | 1.4 |
| Brechin | 37.5 | 36.2 | ..... |
| Cannington | 46.9 | 57.6 | 10.7 |
| Sunderland | 20.1 | 52.2 | 32.1 |
| Woodville | 49.6 | 48.2 | ..... |

OPERATING STATEMENT, FISCAL YEAR 1915-16.

Capital Investment as at October 31st, 1916:

| | |
|---|---|
| Wasdell Power Development and Generating Plant | $136,658 47 |
| Wasdell Distributing Stations | 13,616 24 |
| Wasdell Transmission Lines | 114,406 03 |
| Total Operating Capital | $264,680 74 |

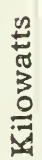
### Revenue as per details below

| | | |
|---|---|---|
| Beaverton Power Accounts | $3,156 97 | |
| Brechin " | 2,615 77 | |
| Cannington " | 3,163 11 | |
| Sunderland " | 2,018 92 | |
| Woodville " | 3,354 15 | |
| Severn System " | 3,846 13 | |
| | | $18,155 05 |

### Expenditures

| | | |
|---|---|---|
| Operators' and Patrolmen's Salaries and Expenses, including supplies | $3,461 02 | |
| Administration and General Office Expenses | 1,010 19 | |
| Interest on Capital Investment | 9,114 66 | |
| | | 13,585 87 |
| Surplus applicable to Sinking Fund and Depreciation Reserve Account | | $4,569 18 |

## PARALLEL OPERATION OF THE SEVERN, EUGENIA AND WASDELLS SYSTEMS

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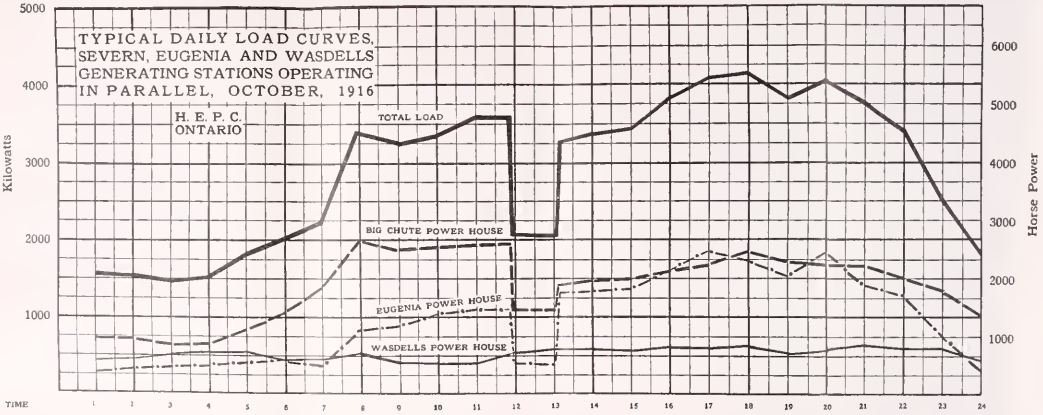
force. Careful studies of the lines were made and whenever it was profitable the amount of conductor material was reduced to the most economical point. The material recovered in this way enabled almost all extensions necessary to be taken care of without delay and without the purchase of additional conductor.


TYPICAL DAILY LOAD CURVES,
SEVERN, EUGENIA AND WASDELLS
GENERATING STATIONS OPERATING
IN PARALLEL, OCTOBER, 1916
H. E. P. C.
ONTARIO
TOTAL LOAD
BIG CHUTE POWER HOUSE
EUGENIA POWER HOUSE
WASDELLS POWER HOUSE
Kilowatts
Horse Power
TIME
5000
4000
3000
2000
1000
6000
5000
4000
3000
2000
1000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

## PARALLEL OPERATION OF THE SEVERN, EUGENIA AND WASDELLS SYSTEMS

As mentioned above, some action became necessary to relieve the load conditions at the Big Chute generating station caused by the increase of the power demand of the municipalities fed from this plant.

The first step in this direction was the erection of a 22,000-volt tie line of No. 1/0 aluminum, seven miles long, between the Wasdells power house and the sub-station belonging to the Municipality of Orillia at Longford. The balance of the circuit was completed by the existing Orillia 22,000-volt lines via the Orillia transforming and switching stations and the Big Chute plant. To complete telephone communication between the plant arrangements were made with Orillia to erect a telephone circuit on the power line poles between Orillia and Longford.

The two plants were placed in normal parallel operation on July 24th, the Wasdells plant supplying practically all the load previously taken by Orillia from the Big Chute plant in addition to the load taken by the municipalities of the Wasdells System. Thus the primary object was gained of loading the Wasdells plant to a degree of economical operation and reducing the load on the Big Chute plant.

The power supply for the Severn System was further augmented by the paralleling of the Eugenia plant with the Big Chute plant. This was accomplished by the erection of a 22,000-volt tie line of No. 1/0 copper and No. 9 iron telephone circuit, twenty-four miles long, between the Eugenia power house and the Collingwood distribution station. The tie line was built in an incredibly short space of time and power from the Eugenia plant was first supplied to the Severn System on October 6th. Temporary metering equipment was installed at both the Wasdells and the Eugenia plants to measure the interchange of power.

The parallel operation of these systems has been entirely satisfactory, with added security of service to all customers supplied therefrom.

On another page will be found curves showing typical fall operating conditions for twenty-four hours with the three systems in synchronism.

## CENTRAL ONTARIO SYSTEM

The operation of the Central Ontario System has been entirely satisfactory since passing into the hands of the Commission. On account of the various points of supply total interruptions to service are almost impossible and have seldom, if ever, occurred. The operation of equipment has been most successful, no failures of any importance having taken place.

The steadily growing load at various points has necessitated some readjustment of equipment. One 750 k.v.a. transformer was moved from Port Hope to Oshawa, bringing the capacity of that point up to 2,250 k.w., and on account of the construction of the Government arsenal at Lindsay it was necessary to interchange two 300 k.w. units at Lindsay for two 750 k.w. units from Cobourg. At other points equipment of less importance has been replaced by apparatus more suitable to existing load conditions than that formerly used.

Practically all equipment which had become obsolete or unfit for service was scrapped and advantage taken of the high prices for scrap metals at present in force. Careful studies of the lines were made and whenever it was profitable the amount of conductor material was reduced to the most economical point. The material recovered in this way enabled almost all extensions necessary to be taken care of without delay and without the purchase of additional conductor.

While the growing load will undoubtedly soon overtake the present capacity of generating plants it has been possible to carry all load this year without taxing equipment and with a conservative amount of reserve apparatus available.

Loads at the various towns are shown in the table below and the curve of the weekly peaks shows the growth of load since this property has been under the control of the Commission. Another table shows the total output of the system for the current year and comparison of operation for the year 1915.

## Power Generated, Central Ontario System

| Month | Peak Load, 1915 | Peak Load, 1916 | Increase in H.P. |
|---|---|---|---|
| November | 15,100 | 17,800 | 2700 |
| December | 13,400 | 18,190 | 4790 |
| January, 1916 | 13,300 | 16,150 | 2850 |
| February | 12,560 | 13,700 | 1140 |
| March | 11,500 | 13,750 | 2250 |
| April | 11,610 | 12,640 | 1030 |
| May | 11,100 | 12,650 | 1550 |
| June | 10,600 | 15,300 | 4700 |
| July | 11,980 | 15,600 | 3020 |
| August | 14,570 | 15,850 | 1280 |
| September | 14,550 | 16,500 | 1950 |
| October | 16,200 | 18,600 | 2400 |
| Peak for year | 16,200 | 18,600 | 1800 |

| Municipality | Load in H.P. October, 1916 |
|---|---|
| Whitby | 217 |
| Bowmanville | 1247 |
| Oshawa | 1568 |
| Newcastle | 20 |
| Orono | 20 |
| Port Hope | 375 |
| Cobourg | 502 |
| Colborne | 75 |
| Brighton | 72 |
| Trenton | 670 |
| Belleville | 1434 |
| Napanee | 315 |
| Deseronto | 302 |
| Stirling | 75 |
| Tweed | 87 |
| Lindsay | 1062 |
| Peterboro | 3067 |
| Millbrook | 38 |

## MUSKOKA SYSTEM

The power development on the south branch of the Muskoka River at Muskoka Village which had been taken over from the Municipality of Gravenhurst was formally under operation by the Commission on November 1st. The purchase comprised the power site which had been partially developed by the municipality and the existing generating station and hydraulic works on the property. On November 1st power was being supplied to Gravenhurst at 6,600 volts and a small amount to Muskoka Village at 120 volts.

The Commission immediately proceeded with the extension and remodelling of the generating station to place it in first-class operating condition and to deliver the power covered by contract with the Municipality of Huntsville. A detailed description of the new hydraulic and electrical equipment of the plant will be found in another section of the report. Every effort was exerted by the Commission to supply uninterrupted service during the alterations to the station.

On August the 15th a 26 mile, 22,000-volt, No. 2 S.R. aluminum line to Huntsville distribution station was made alive for test. The sub-station was placed in operation permanently on August 25th.

All construction details at the power house were not completed at the end of October, which was due to the difficulty in obtaining reasonable delivery of materials.

The peak load demands of the Municipalities of Gravenhurst and Huntsville for the month of October were 235 and 580 h.p. respectively. The Commission will be in a position to supply standard service and anticipates a very successful future for the Muskoka System.

## PORT ARTHUR SYSTEM

Steady progress was made in the operation of the Port Arthur System during the past year. The increase in load was taken care of by loading the Current River Hydraulic Plant of the City of Port Arthur to its full capacity. Thus the Commission was not obliged to increase the present reserve demand of 2,600 h.p. from the Kaministquia Power Company. The Company's power supply to the Commission during the year was of the usual high standard.

The total demand from both sources is approximately 5,100 horse-power at the present with indications of a very material increase in the near future.

The more uniform routine of operation established in 1915 whereby the load control of the Current River station was placed in the hands of the Commission's operators has proved very economical in every respect.

The Hydro transforming sub-station is in excellent condition, and no failures were reported during the year.

Plans and specifications were prepared and material ordered for the erection of a wood pole line entrance and switching structure, at the transformer station to provide a means of sectionalizing the two 22,000 volt outgoing circuits to the grain elevators and to the waterworks station. This work will be carried out in conjunction with the Port Arthur Commission. Five air break switches will be installed on this structure. The Port Arthur Commission is proceeding with the erection of two air break switches on each of the lines built to the elevators and to the waterworks station. When these installations are completed it will be possible to feed any one of the four elevator stations from either of the two outgoing 22,000 volt lines from the sub-station and will greatly increase the flexibility and security of the service on the high tension portion of the system.

| | | |
|---|---|---|
| Capital Investments for the Port Arthur System to October 31st, 1916: | | |
| Transmission Lines | $21,303 12 | |
| Transformer Stations | 86,089 91 | |
| Total Operating Capital | | $107,393 03 |

The Operating and Maintenance Expenses for the fiscal year ending October 1916, are as follows:—

| | | |
|---|---|---|
| Operators' Salaries and Expenses, including Operating supplies, and proportion of Administration and General Office Expenses | $5,721 88 | |
| Interest at 4% per annum | 4,325 00 | |
| Sinking Fund at 1.8% per annum | 1,946 25 | |
| Cost of Power | 37,365 00 | |
| | | $49,358 13 |

A Financial Statement of Operation for the fiscal year ending October 31st, 1916 is given below:—

| | | |
|---|---|---|
| Sum of monthly loads delivered and value, including charges for Administration, General Expenses, Operation, Interest, Sinking Fund and Depreciation | 28,080 h.p. | $54,322 11 |
| Sum of monthly loads purchased and value, including Administration, General Expense, Operation, Interest and Sinking Fund | 28,080 h.p. | 49,358 13 |
| Surplus applicable to Depreciation Reserve | | $4,963 98 |

## THE ST. LAWRENCE SYSTEM

The operation of the Commission's system on the St. Lawrence River for the past year proved very successful. The service received from the hydraulic plant at Iroquois was thoroughly reliable and practically no interruptions occurred. A recent inspection of the Commission's sub-stations and lines shows that so far the depreciation of this system is quite negligible.

The total load demand of the municipalities during the year increased to 1,000 h.p., an amount considerably above the capacity of the generating station at Iroquois. This difficulty was temporarily solved by paralleling the municipal auxilliary steam plant at Brockville with the Commission's power supply purchased at Iroquois.

The transpositions in the transmission line between Morrisburg and Prescott are being rearranged to remove the inductive effect which has interfered with the proper operation of the Bell Telephone Company's line paralleling this line. A series of very interesting tests from an engineering standpoint are being made in connection with this work.

| Municipality. | Load in Oct., 1915. H.P. | Load in Oct., 1916. H.P. | Increase in H.P. |
|---|---|---|---|
| Brockville | 335 | 348.5 | 13.5 |
| Prescott | 205 | 217 | 12 |
| Winchester | 60.3 | 58.9 | ... |
| Chesterville | 40.2 | 48.2 | 8. |
| Williamsburg | 29.5 | 17.4 | ... |

ST. LAWRENCE SYSTEM OPERATING STATEMENT, FISCAL YEAR 1915-16.

| | | |
|---|---|---|
| Capital Investments as at October 31st, 1916: | | |
| St. Lawrence Distributing Stations | $23,063 25 | |
| St. Lawrence Transmission Lines | 147,013 62 | |
| Total Operating Capital | | $170,076 87 |
| **Revenue as per details below** | | |
| Prescott Power Accounts | $4,462 11 | |
| Chesterville " | 1,838 69 | |
| Winchester " | 2,321 42 | |
| Williamsburg " | 563 21 | |
| Brockville " | 8,340 86 | |
| | | 17,526 29 |
| **Expenditures** | | |
| Operators' and Patrolmen's Salaries and Expenses proportion of Administration and General Office Expense | $1,559 66 | |
| Interest on Capital Investment | 6,783 35 | |
| Cost of Power purchased | 5,513 89 | |
| | | 13,856 90 |
| Surplus applicable to Sinking Fund and Depreciation Reserve Accounts | | $3,669 39 |

## TOTAL CAPITAL INVESTMENT TO OCTOBER 31st, 1916

Following is a statement of expenditures on Capital Account, including Niagara, Severn, St. Lawrence, Wasdell, Eugenia, Muskoka, Port Arthur, Renfrew and Ottawa Systems, Stock on Hand, Tools and Equipment, Municipal Construction.

### Niagara System—Transmission Lines

| | | |
|---|---|---|
| Right-of-Way | $1,034,920 58 | |
| Steel Tower Lines | 3,403,585 05 | |
| Telephone Lines | 129,706 69 | |
| Relay System Lines | 54,537 32 | |
| Conduit System (Ont. Power Co. to Niagara Station) | 96,698 64 | |
| | | $4,719,448 28 |
| Right-of-Way (Dundas-Toronto), in course of construction | $6,366 37 | |
| Steel Tower Lines, in course of construction | 8,631 74 | |
| Conduit System, in course of construction | 22,157 54 | |
| Telephone Line (Section A), in course of construction | 1,297 70 | |
| | | 38,453 35 |
| Wood Pole Lines | $1,785,208 01 | |
| Wood Pole Lines, in course of construction | 189,094 42 | |
| | | 1,974,302 43 |
| Welland and St. Catharines District Lines | $16,445 63 | |
| | | 16,445 63 |
| Rural Line Construction | $324,168 44 | |
| | | 324,168 44 |
| Power Development, Right-of-Way and Preliminary Engineering | $33,512 91 | |
| | | 33,512 91 |

### Transformer Stations

| | | |
|---|---|---|
| Stations | $2,797,209 61 | |
| Stations and Extensions to same, in course of construction | 34,415 66 | |
| | | 2,831,625 27 |
| Distributing Stations | $221,130 02 | |
| Distributing Stations, in course of construction | 10,634 26 | |
| | | 231,764 28 |

### Severn System

| | | |
|---|---|---|
| Big Chute Power Development, including Generating and Transformer Stations | $349,787 46 | |
| Transmission Lines | 335,497 20 | |
| Distributing Stations | 78,451 08 | |
| Distributing Stations Extensions in course of construction | 1,409 83 | |
| | | 765,145 57 |

### St. Lawrence System

| | | |
|---|---|---|
| Transmission Lines | $147,228 58 | |
| Distributing Stations | 23,063 25 | |
| Distributing Stations in course of construction | 6,366 07 | |
| | | 176,657 90 |

## Wasdell System

| | | |
|---|---|---|
| Power Development, including Generating and Transformer Station | $136,658 47 | |
| Transmission Lines | 114,406 03 | |
| Distributing Stations | 13,637 00 | |
| | | 264,701 50 |

## Eugenia System

| | | |
|---|---|---|
| Power Development, including Generating and Transformer Station | $638,854 14 | |
| Transmission Lines | 409,355 93 | |
| Distributing Stations | 51,944 33 | |
| Distributing Stations in course of construction | 1,249 29 | |
| Transmission Lines in course of construction | 36,276 66 | |
| Operation | 12,120 44 | |
| | | 1,149,800 79 |

## Muskoka System

| | | |
|---|---|---|
| South Falls Power Development, including Generating and Transformer Station | $78,707 61 | |
| Transmission Line | 52,626 47 | |
| Distributing Station | 8,923 95 | |
| Operation | 912 26 | |
| | | 141,170 29 |

## Port Arthur System

| | | |
|---|---|---|
| Transmission Lines | $21,303 12 | |
| Transformer Station | 86,089 91 | |
| | | 107,393 03 |

## Renfrew System

| | | |
|---|---|---|
| Round Lake Storage Dam | $20,168 86 | |
| Power Development (repayable) | 717 41 | |
| | | 20,886 27 |

## Ottawa System

| | | |
|---|---|---|
| Meter Equipment | $432 39 | |
| | | 432 39 |

## General Accounts (Chargeable)

| | | |
|---|---|---|
| Municipal and Rural Construction Work repayable | $290,247 62 | |
| Sales to Municipalities | 159,226 01 | |
| Renfrew District Operating Charges | 2,519 82 | |
| | | 451,993 45 |

## General Accounts (Capitalized)

| | | |
|---|---|---|
| Office Furniture, Equipment, Stationery, Unexpired Insurance, etc. | $36,531 78 | |
| Office Furniture and Equipment, Electrical Inspection Dept. | 3,863 60 | |
| Toronto Storehouse, Testing Laboratory, Garage and Machine Shop | 117,883 72 | |
| Dundas Storehouse | 1,586 04 | |
| Automobiles and Trucks (Depreciated value) | 27,480 29 | |
| Office Building | 335,866 60 | |
| | | 523,212 03 |

### Stock and Tools

| | | |
|---|---|---|
| Stock on hand for construction purposes and sale to Municipalities | $163,673 72 | |
| Line Maintenance Stock for all Systems | 59,905 07 | |
| Operating Department's Testing and Metering Equipment for all Systems | 2,609 76 | |
| | | 226,188 55 |
| Line and Station Construction Tools and Equipment | $4,000 32 | |
| Line and Station Maintenance Tools | 6,666 08 | |
| Hydraulic Construction Tools | 1,402 88 | |
| | | 12,069 28 |
| Laboratory Operation | $9,482 04 | |
| Machine Shop Operation (Stock) | 520 35 | |
| | | 10,002 39 |
| | | $14,019,374 03 |

## PROVINCIAL EXPENDITURES

### Fiscal Year 1915-16

| | | |
|---|---|---|
| Engineering assistance to non-operating Municipalities for the gathering of data throughout the Province for statistical purposes; reports on Municipal operation | $19,897 74 | |
| Municipal estimates for power supply non-operating Municipalities and also rates investigations | 4,058 45 | |
| Hydrographic surveys, storage surveys, reports and investigations on power sites and stream flow for the Province | 31,366 77 | |
| Reports and statistical data on overhead and underground construction for Municipalities; investigations relative supply of power to rural districts and gathering information with respect to the use of electricity along lines not at present operated by the use of such | 8,625 85 | |
| Engineering investigations, surveys and reports on proposed Municipal Electric Railways | 38,675 66 | |
| Administration and general office expense over all above expenditures | 28,140 55 | |
| | $130,765 02 | |
| *Less*: | | |
| *Credits*:—Various supplies, equipment and capital expenditures charged Province former years, now capitalized in Commission's books, sold, or placed in stock | 38,391 49 | |
| | | $92,373 53 |
| Electrical Inspection—Balance of operating expenses for the year, not including capital investment, such as furniture, typewriters, etc., which is carried forward | | 31,345 53 |
| Special Hydrographic Investigations—Lake-of-the-Woods Districts for the Department of Lands and Mines | | 1,972 02 |
| Equipment on hand purchased for Hydrographic work | | 1,353 28 |
| | | $127,044 36 |

## BALANCE SHEET

OCTOBER 31st, 1916.

### Assets

| | |
|---|---|
| Sundry Expenditures, per list | $14,019,374 03 |
| Warrantable Advances | 35,118 16 |
| Unpaid Power Bills, October 31st, 1916 | 375,579 20 |
| Cash on hand | 297,140 80 |
| | $14,727,212 19 |

### Liabilities

| | |
|---|---|
| Provincial Treasurer | $13,588,667 72 |
| Niagara System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 939,814 38 |
| Wasdell System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 4,569 18 |
| Severn System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 57,030 56 |
| St. Lawrence System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 4,345 93 |
| Welland System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 1,449 24 |
| Port Arthur System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 27,151 56 |
| Ottawa, applicable to unpaid Power | 1,204 00 |
| Interest Account | 54,061 38 |
| Cable Reels | 210 85 |
| Central Ontario System Balance | 38,536 29 |
| Storehouse Operation, Surplus | 6,697 03 |
| Garage Operation, Surplus | 533 25 |
| Administrative Office Building, applicable to Sinking Fund | 2,940 82 |
| | $14,727,212 19 |

# SECTION IV

## MUNICIPAL WORK

### MUNICIPAL ADVICES

#### Niagara System

The Hydro-Electric enabling and money by-laws were submitted in:—

Dashwood, Dublin, New Dundee, Forest, Hensall, Rodney, West Lorne, Springfield, St. Jacobs and Zurich.

Estimates of the cost of supplying power to these municipalities have been forwarded by the Commission at their request.

The work of building and remodelling the distribution systems in these municipalities is being arranged for, and contracts with the Commission for power have been forwarded for signature.

At the request of these municipalities arrangements are being made by the Commission to have their engineers supervise the construction and remodelling of distribution systems for these municipalities, and, as soon as the necessary transmission lines and distribution systems are completed, power will be supplied.

Hydro-Electric enabling and money by-laws were submitted in:

Burgessville, Exeter, Harriston, Highgate, Listowell, Milverton, Otterville, Palmerston, Wellesley and Wyoming.

All of these by-laws carried by large majorities, and distribution systems were constructed under the supervision of the Commission's engineers, and power was turned on early in the year. All of these systems are now operating satisfactorily.

Engineering advice was given and rates were forwarded to the following municipalities in connection with proposed extensions to rural customers, outlining the necessary procedure to be followed under which power could be supplied to petitioners in these townships:

Ancaster Township, Barton Township, Biddulph Township, Blandford Township, Blenheim Township, Brantford Township, Burford Township, Chinguacousy Township, Dover Township, East Flamboro' Township, Esquesing Township, Etobicoke Township, Enniskillen Township, Guelph Township, London Township, Raleigh Township, Sandwich East Township, South Dumfries Township, Southeast Hope Township, Thorold Township, Tilbury Township, Tilbury East Township, Toronto Township, Towensend Township, Vaughan Township, Waterloo Township, Wilmot Township, West Nissouri Township, West Oxford Township, Woodhouse Township, Yarmouth Township, York Township, Zone Township.

The auditor's annual report shows that the operation of the systems in Ancaster, Blenheim, Comber, Dresden, Dundas, Ford City, Pt. Dalhousie, Sandwich and Thamesville has been very satisfactory, each of these systems showing a fair margin of profit for the year's operation.

During the year engineering assistance, in connection with extensions to distribution system and the taking on of new power customers, was given to the following municipalities:

Ailsa Craig, Ayr, Baden, Beachville, Brantford, Caledonia, Delaware, Dorchester, Dutton, Elmira, Elora, Embro, Fergus, Goderich, Hagersville, Lambeth, Lucan, Lynden, Mt. Brydges, New Hamburg, Paris, Pt. Stanley, Rockwood, Simcoe, Seaforth, St. George, Tilbury, Walkerville, Watford, Woodstock.

The auditor's report shows that all of these municipalities have operated for

the year with a margin of profit, the number of lighting customers having been materially increased during the year, and the power consumption considerably increased, especially in those towns that are manufacturing large quantities of war munitions.

During the year estimates were forwarded to the following municipalities:

Agincourt, Amherstburg, Atwood, Brigden, Brownsville, Burlington, Chippawa, Crediton, Drayton, Essex, Harrow, Humberstone, Kerrwood, Kingston, Leamington, Moorefield, Pt. Colborne, Scarborough Township.

### Acton

During the year the Department assisted in obtaining two large additional power loads which will greatly increase the business done by this municipality. Engineering advice was also given in connection with necessary changes to the distribution to take care of the increased load and of altered conditions in connection with the streets.

### Amherstburg

During the year engineering assistance was given to the Municipality of Amherstburg in designing and supervising the remodelling of their street lighting system.

This system is now operating satisfactorily.

### Bothwell

The Bothwell system shows a very satisfactory operating report for the year and in December a small oil pumping load was taken on. It is expected that a considerable amount of power will be sold in Bothwell district in the near future for oil pumping purposes.

### Brampton

Owing to the marked increase in the power load it became necessary to increase the capacity of the municipal station, and at request of the local Commission assistance was given in the purchase of larger transformers to take care of the increased load. Assistance was also given from time to time in connection with various matters connected with the business.

### Burford

The operating report for Burford for the year is very satisfactory and in September a considerable number of customers were taken on the system, owing to the fact that the local companies decided to discontinue service in Burford.

### Chatham

The number of "Commercial" and "Domestic" customers in Chatham shows a large increase for the year, and approximately 500 h.p. in motor loads has been connected to the system. The municipality has installed 120 h.p. in pumping motors at the municipal pumping plant.

### Clinton

The Light and Power Department of the Utilities Commission reports a very favourable year with some additional lighting load and also extra power load.

When the Hydro was first introduced at Clinton, a privately owned plant had contracts with various customers, which did not expire until 1916. One of these contracts necessitated the operation of the old steam plant at a considerable loss to the Department. This has now been changed over to Hydro power and the system is operating at a much higher point of efficiency.

### Dereham Township

A large number of rural petitions were received from the ratepayers in this township in the district between Tillsonburg and Brownsville, and also between Tillsonburg and Springford, and during the year a systematic canvass was made in these districts and sufficient contracts signed at the approved rates to warrant the Commission proceeding with the construction of the necessary lines to supply this power.

### Dunnville

In September the Hydro-Electric enabling by-law and a money by-law for $53,000.00 were voted on by the ratepayers and passed by large majorities.

At the request of the municipality a valuation was made of the local plant and distribution system belonging to the Dunnville Electric Light Company, and negotiations were entered into by the municipality through the Commission which resulted in the purchase of the company's plant by the municipality for $16,500.00.

A contract with the Commission has been signed at the following rate:

| H.P. | Delivered volts. | Cost per H.P. per year. |
|---|---|---|
| 300 | 45,700 | $27.77 |

### Galt

The municipality has approved of the Commission supplying power at 12,200 volts, instead of 6,600 volts, as at present, and arrangements will be made by the local Commission during the coming year to install additional transformer equipment to take care of the large increase in load.

### Grantham Township

During the year engineering advice was given at various times in connection with extensions to the Grantham Township system. The operation of this system is being handled by the St. Catharines Commission.

### Hamilton

A detailed report was prepared by the Commission's engineers at the request of the municipality, in connection with the matter of placing the wires of all crossings in the business district under ground on the main streets.

Arrangements have been made whereby the municipality will pay for and take over the 13,000 volt lines within the limits of the municipality, which lines were originally installed by the Commission to supply the waterworks with power direct.

### Hespeler

Owing to the large increase in loads in the various municipalities in this district, after receiving the approval of the municipalities, the Commission has

decided to supply power to Hespeler and other municipalities in this district at 13,200 volts instead of 6,600 volts as at present.

A full report in connection with this change was made by the Commission's engineers and submitted to the municipality.

### Ingersoll

The Commission, at the request of the municipality, has given engineering assistance in connection with the installation of an ornamental street lighting system on the Main Street, as well as engineering assistance in connection with other matters regarding the operation of the system.

### London

At the request of the municipality the Commission's engineers investigated the matter of interference between the lines of the Public Utilities Commission and the lines of the London Electric Company. A full report in connection with this matter was made and submitted.

### London Township

On requests for petitions from the proof line district and that adjacent to Ettrick, arrangements were made and meetings held at which committees were elected to go on with the propaganda work in the districts referred to.

### Mitchell

Arrangements are being made by the Commission to supply this municipality with power at 26,400 volts instead of 13,200 volts as formerly, and while this change is being made the municipality is advised to erect a new sub-station building in which this equipment will be installed.

The municipality has decided to discontinue the use of the 60-cycle steam plant, which will mean a considerable saving to the power and lighting users.

### New Toronto

Contracts for large amounts of power have been made and assistance given by the Municipal Department in laying out extensions to the local system to serve these loads.

The greatly increased demand will necessitate extensive additions to the transmission line supplying that municipality and will also necessitate the building of a new and much larger transformer station. To meet the immediate demands, arrangements have been made and work commenced on the erection of temporary lines and stations, while engineering has been done on the permanent work.

### Niagara Falls

Hydro rates were put into force in the municipality at the first of the year.

In November the municipality's contract with the Ontario Power Company expired and from that date power was supplied by this Commission. The lines connecting the municipal station with the Commission's high tension station, were in the most part purchased from the Ontario Power Co. Arrangements were

also made whereby the municipality purchased the sub-station equipment in the municipal station, which was the property of the Ontario Power Company. A number of estimates were prepared *re* cost of power to several large customers who were considering locating in the neighbourhood of this city.

### Niagara-on-the-Lake

At the request of the municipality the Commission's engineers supervised the installation of new electrically operated pumps, as well as a new sub-station building for same.

### Norwich

During the year assistance was given to the municipality in connection with the installation of an ornamental street-lighting system for the business section of the village. The operation of the system for the year shows a substantial increase in load and a considerable surplus.

### North Norwich Township

At the beginning of the year forty-eight rural customers were being supplied with power, and during the year extensions have been made to Burgessville and also an extension to supply a number of farmers south of Newark. The township having signed a standard township contract with the Commission for power, arrangements have been made to extend the township lines south from Newark and west from Burgessville.

Hydro-Electric power for rural purposes in this township has proved a great success, as is shown by the number of farmers who have signed contracts during the year.

### South Norwich Township

A large number of petitions have been received from petitioners in the Springford district in this township, and during the year sufficient contracts were signed at the standard rural rates for the construction of a line running south of Newark, and arrangements are now being made for the construction of extensions to supply the consumers who have signed contracts for power.

### Petrolia

The distribution system in Petrolia, which was purchased from the Petrolia Utilities Company, was remodelled under the direction of the Commission's engineers and Hydro-Electric power was first supplied to the municipality in the month of April.

A considerable number of extensions were made to the system during the year, to supply power to various companies for oil-pumping purposes, and there is every indication that practically all of the oil pumping in this district will be done by Hydro-Electric power in the very near future.

A complete street lighting system was put into operation, as well as an ornamental lighting system on the main street, consisting of ornamental cast iron standards of the shepherd's crook type, equipped with 600 c.p. lamps.

### Port Arthur

Municipal operations in this city ran smoothly during the year and with little assistance from this office. Late in the year, however, the Commission was waited upon by a deputation composed of the Mayor and several of the Commissioners, who urged that Dog Lake be developed for Port Arthur. Many facts and figures were presented, showing the necessity for providing another source of power supply by the time the present Kam power contract expires in the spring of 1920.

The deputation departed to follow out the suggestion made to them, namely, to submit a written petition to the Commission setting forth the facts in the case. Such a petition will doubtless be received within the coming year.

### Preston

At the request of the municipality the Commission's engineers prepared and submitted a complete report in connection with the waterworks situation in the municipality.

Engineering assistance and advice were also given in connection with various matters relating to the operation of the system.

### Ridgetown

Arrangements were made whereby the municipality installed electric-driven pumps to operate some new wells in connection with its municipal pumping plant. These pumps were put into operation in November, 1916.

### Sarnia

The Hydro enabling by-law and also a money by-law were passed by large majority at the municipal elections.

The enabling by-law was for an amount of $120,000, which is the amount necessary to cover the first payment for the plant purchased from the Sarnia Gas and Electric Light Co., and also take care of the cost of remodelling that system. The plant purchased is being remodelled under the direction of the Commission's engineers and a complete street lighting system is being installed. Ornamental lamps are being installed on the main streets. A combination steel trolley pole and ornamental brackets being used. Lamps in the main street will be 20 ampere lamps of 1,000 candle power capacity. It is expected that the full amount of power contracted for will be required within the first year's operation of the system.

### Scarboro Township

Acting on petitions received from the township, an investigation was made as to the possibility of supplying residents in the south-western portion of the township with an electric lighting and power service, and estimates, together with rates for such service, were submitted. A number of public meetings were held and the Council appointed representatives to canvass the districts in question. As a result of this canvass some 215 contracts were secured.

At the end of the fiscal year the Township Council was preparing to enter into an agreement with the Commission for the building of lines and the supply of electric power.

### St. Catharines

Arrangements were made whereby the Ontario Power Company has agreed to supply additional power to the municipality for a period of three years. Power to be supplied from the Ontario Power Company's transformer lines in the St. Catharines district.

Approximately 1,000 customers have been added to the system during the year and arrangements have been made to supply power to a number of very important munition plants.

### St. Mary's

The revision of the street lighting system and also the power plant, which were under way last year, have been completed.

New power customers have been obtained and the operation during the year has been quite satisfactory.

### St. Thomas

Owing to the large increase in loads on the system the municipality requested the Commission to prepare and submit specifications and drawings to the local commission for a new sub-station building, and additional equipment to be installed therein.

At the request of the municipality the Commission's engineers supervised the erection of this building and the installation of the electrical equipment.

### Stamford Township

At the request of the Township of Stamford the Commission negotiated with the Ontario Distributing Company and purchased for the municipality the Company's lines, plant and system in the township outside of the limits of the City of Niagara Falls for the sum of $29,500.00, and the township submitted to the ratepayers the Hydro-Electric enabling by-law and a money by-law for an amount to cover the purchase of this system.

The Commission is at present operating this system for the township until such time as legislation has been passed whereby the township can sell debentures and operate this system; after which time the plant will be turned over to the township and the Commission reimbursed for the purchase amount.

### Stratford

The load at Stratford station has increased to such an extent that it was decided to erect a new sub-station and contracts for the station and equipment have been let. The station when complete will be one of the most modern on our system and will have a capacity for a nominal load of 3,000 h.p.

In the Water Works Department the year's business shows the completion of the revisions which were being carried out in the pumping plant and also the completion of the new water tower. These additions are working out very satisfactorily to the city.

The installation of gasoline driven pumps in place of steam as auxiliary to Hydro pumping shows a net saving of over $3,000 per year.

### Strathroy

During the year the local Hydro-Electric System and the waterworks system were placed under the management of a Utilities Commission, and the old steam pumps have been replaced with electrically operated centrifugal pumps for the domestic water supply, and a gasoline engine operated unit has been installed as a stand-by for fire purposes.

### Tavistock

During the year the Commission's engineers looked over the incorporated village's requirements for a distribution system and estimates were prepared showing the cost and submitted to the council. Estimates showing the cost of 4,000-volt power were also submitted and a contract was signed with this Commission for 50 h.p.

At the municipality's request the Commission's engineers supervised the installation of the system, all labour being employed locally.

A small automatic domestic pump, driven by a single-phase motor, was installed in the waterworks station to handle the pumping electrically.

The local system was put into operation October the 26th.

### Tillsonburg

During the year the municipality authorized the Commission to change its distribution system from 2,200 volts to 4,000 volts operation, in order that the surrounding rural districts might be supplied more advantageously at this voltage.

Engineering assistance was also given by the Commission in connection with various matters regarding the operation of the system.

### Toronto

During the year negotiations have been in progress in connection with the purchase of the lines and system of the Interurban Power Company lying east of the Humber, and it is expected that negotiations for the purchase of these lines will be completed early in the coming year.

The auditor's report shows that in spite of the large cut in rates at the beginning of the year the system shows a good margin of profit for the year's operation, and the large increase in the number of power and lighting customers shows that the ratepayers in Toronto appreciate and patronize their own utility.

### Toronto Township

During the year a number of extensions were made to the distribution system to serve additional customers, while sufficient new customers came on the existing lines to warrant a cut of 25 per cent. in the service charge.

### Wallaceburg

During the year electrically operated pumps were installed and put into operation in the new waterworks station, and also small sewage pumps to take care of the necessary sewage pumping in the municipality.

The auditor's report for the year shows a substantial surplus for the year, and a number of large important power customers have been added to the system.

### Waterloo

The auditor's report for the year 1916 shows that the Waterloo Hydro-Electric System is operating very successfully from a financial standpoint, and arrangements are being made to have this municipality supply power to a rural line extending north from the limits of the municipality in Waterloo Township.

### Waterloo Township

Various petitions have been received from farmers in the township for a supply of Hydro power and an extension from the Waterloo system is being constructed on King St. North and the Lexington Road, to supply some twelve farmers who have signed contracts with the township.

### Watford

The Hydro-Electric enabling by-law and a money by-law for $10,000.00 were submitted to the ratepayers in August and passed by large majorities, and a contract was signed with the Commission for power at the following rate:

| H.P. | Delivered volts. | Cost per H.P. per year. |
|---|---|---|
| 100 | 4,000 | $59 45 |

Arrangements have been made to purchase the local distribution system for $2,500.00, and the municipality has requested the Commission to superintend the remodelling of this system to make it suitable for the distribution of Hydro-Electric power.

### Welland

Arrangements were made to construct a new sub-station in the municipality according to plans prepared by the Commission's engineers. This station will be made so that power will be supplied at 2,200 or 13,200 volts, and station will have an ultimate capacity of approximately 10,000 h.p. The load on the Welland station has increased from 1,200 to approximately 2,100 h.p. during the year. Several very large munition plants are supplied from the Welland system.

A number of estimates were prepared by the Commission's engineers *re* cost of power to large power customers who proposed locating in the Welland district.

### Weston

Assistance was given the local Commission in various matters, particularly in securing a large power contract, while engineering advice was given in laying out and erecting the necessary additions to the system to provide for this load.

### Windsor

During the year an extension was made to the system to supply the Municipality of Ojibway, where a large steel plant is being constructed. It is expected that considerable power load will be obtained in Ojibway in the near future.

### York Township

Many applications for electric lighting and power services were received during the year and estimates made on the costs of supplying these applications, while numerous extensions and additions were made to the distribution system.

In order to place the business on a better basis and to relieve the Toronto Hydro System from a portion of the responsibility of supplying such service in the township, an effort was made to have the township enter into an agreement with the Commission for the necessary supply of power and the financing of transmission lines. This proved unsuccessful and as a result a number of applicants have been unable to secure the service.

## EUGENIA AND SEVERN SYSTEMS.

Distribution systems, inclusive of street lighting, were designed, constructed and extended during the year in the following municipalities, under the supervision of the engineers of the Department, and Hydro service given for the first time to such systems from the transmission lines of the Commission:

Chatsworth, Chesley, Grand Valley, Holstein, Markdale, Orangeville, Shelburne.

Distribution systems, construction work on which was begun during the latter part of 1915, were completed and placed in operation and given Hydro power for the first time in the following municipalities:

Dundalk, Durham, Flesherton, Mount Forest.

Valuations were made under the supervision of and by the engineers of the Department of privately owned electric light and power plants, distribution systems and transmission lines at the request of various municipalities.

Valuations were made with the idea of purchasing the privately owned properties for the purpose of incorporating same into the local Hydro-Electric Systems. These valuations were supplemented with estimates showing cost of power to the municipalities concerned, and also by special investigations for each locality in connection with load conditions.

*Alton*: A valuation of distribution system.

*Grand Valley and Arthur*: A valuation of steam generating plant, distribution systems and transmission lines connecting the municipalities.

*Chesley, Hanover, Meaford, Markdale, Port Elgin, and Southhampton*: A valuation of hydraulic generating plants, transmission lines and distribution systems.

Assistance was given by engineers of the Department in the nature of addressing public meetings prior to voting on money and enabling by-laws in the following municipalities:

Arthur, Chesley, Grand Valley, Holstein, Markdale, Tara.

Estimates covering the cost of power and cost of installation of Hydro service were made and submitted to the following municipalities:

Alliston, Alton, Arthur, Beeton, Caledon, Erin, Horning's Mills, Hepworth, Grand Valley, Kincardine, Lucknow, Meaford, Paisley, Port Elgin, Priceville, Southampton, Tottenham, Teeswater, Tara, Wingham, Wiarton.

Petitions were received and estimates made up and submitted, covering the cost of power to various townships. Investigations were made as to load possibilities, public meetings were held, the Township Councils addressed by engineers of the Department and local committees appointed and rates submitted to these various townships as follows:

Artemesia Township, Amabel Township, Brant Township, Bentinck Township, Derby Township, Essa Township, Euphrasia Township, Floss Township, Nottawasaga Township, Proton Township, Sunnidale Township, Tiny Township, Tay Township, Vespra Township.

Investigations were made and information and engineering advice given *re* the installation of electric motor driven pumps for the purpose of operating waterworks systems in various municipalities. Estimates were made up and submitted covering the cost of operation and installation of such equipment in the following municipalities:

Barrie, Collingwood, Chesley, Mount Forest, Shelburne.

Installations of electric driven pumps were made and completed in the Towns of Collingwood and Mount Forest, and the installations in the other municipalities will be installed and completed early in the new year.

Engineering assistance and advice was given to the following municipalities, in the nature of rate application, soliciting of power loads and new consumers, and other matters pertaining to the management and general operation of the utility, and an engineer of the Department visited each town and village from time to time for such purposes:

Severn System—

Barrie, Collingwood, Coldwater, Creemore, Elmvale, Midland, Penetang, Pt. McNichol, Stayner, Victoria Harbor, Waubaushene.

Eugenia System—

Chatsworth, Chesley, Durham, Flesherton, Holstein, Markdale, Mount Forest, Orangeville, Owen Sound, Shelburne.

Notes on engineering assistance rendered other municipalities are given in the following:

### Alton

During the year investigations were made and estimates prepared and submitted covering the delivery of power to the Village of Alton and adjacent villages in the district.

Estimates were also prepared covering the construction of a transmission line from Orangeville to Alton, to supply the Alton Foundry Company with power for the purpose of manufacturing munitions. An agreement was made with the Company, the line constructed and power delivered for the purposes mentioned above.

The Village is making preparations for submitting enabling and money by-laws to the ratepayers early in the new year, with the intention of taking over the transmission line and the Alton Foundry Company's load.

### Artemesia Township

An agreement was made between the Township Council and the Commission covering Hydro service for farms and for the rural communities of Eugenia and

Ceylon. Power was delivered to a large stock farm near Markdale under this agreement and from requests already received and investigations made the indications are that a large and important rural load will develop in the township and the surrounding district.

### Camp Borden

Advice and information was given to the Department of Militia and Defence in connection with Hydro service for lighting, power, and waterworks systems at Camp Borden.

An agreement was drawn up and submitted for supplying this power.

A transmission line was constructed from a point near the Town of Barrie to the Camp site.

A sub-station building and waterworks pumping plant were also designed and constructed for the Department of Militia and Defence, and power delivered for the operation of the Camp System in the month of June.

### East Luther Township

Estimates were prepared and submitted covering the delivery of from 1,000 to 2,000 h.p. to a point in the township near the Village of Grand Valley, for the purpose of manufacturing peat, large deposits of which exist in paying quantities in that locality.

The industrial growth in this district will be greatly stimulated by the use of Hydro power in such an industry.

### Hanover

Valuations were made, at the request of the municipality, of the Hanover Electric Light Company's property, including the distribution system within the limits of the municipality and the transmission lines to the hamlets of Carlsruhe and Neustadt, and the generating plant at Maple Hill.

The municipality was given advice and assistance by engineers of the Department in the purchase negotiations for this property, prior to voting on a money by-law to provide debentures for such purpose.

Estimates were made up and submitted to the municipality covering the cost of rebuilding the distribution system, which it was proposed to purchase from the private company, and also covering the construction of an entirely new and separate system.

Estimates were made up covering the cost of supplying a large flour and milling company's property with power, independent of the municipality. An agreement was made between this company and the Commission, the transmission line and sub-station constructed and power delivered during the month of October. This line, station and contract will be taken over by the municipality as soon as the service can be given to same after by-laws have been submitted to the ratepayers for approval.

### Owen Sound

Very creditable results from a financial standpoint were made by the operation of the Hydro utility in this municipality during the year, so much so in fact that during the first six months of operation it was found possible to make a reduction of 10 per cent. in rates charged to the consumers for lighting and power service.

The new sub-station building and office building were completed and placed in service during the year.

### Orillia

Negotiations were carried on between the municipality and the Commission, covering the sale of power from the Orillia-Swift Rapids Development, for use on the Commission's Severn system, and also covering the interchange of electric power and energy between the Commission's development at Big Chute, Eugenia Falls and Wasdell's Falls and the Orillia system.

A short term agreement was also entered into between the Water and Light Commission of the Town of Orillia and the Hydro-Electric Power Commission of Ontario, covering the purchase by the town of 2,000 h.p. required for the use of munition plants in the municipality prior to the completion of the Swift Rapids Development. This agreement also provided for the joint use of transmission lines by both parties.

### Port McNichol

An agreement was made between the Canadian Pacific Railway Company and the Commission covering the supply of power for the operation of the Company's terminal and grain elevator at Port McNichol, and power was delivered under the agreement during the latter part of the month of July.

The transmission line was constructed and sub-station equipment installed in the Company's power house to take care of this load.

At the present time the Company's peak load exceeds 1,000 h.p. and preparations are already being made for installing new equipment to take care of increased loads during the coming year.

#### Eugenia System—

This system was placed in operation for the first time during the year, power for which being supplied from the Eugenia Falls hydraulic development.

Power was first delivered to 5 municipalities when the development was placed in service on November 1st. Since that date service has been given to 6 additional towns and villages, making a total of 11 municipalities connected to the system at the close of the fiscal year on October 31, 1916.

By-laws were submitted to the ratepayers and carried in four additional municipalities and construction of distribution systems begun and were in progress at the close of the year.

Assistance was also given to two municipalities, which will submit enabling and money by-laws during the early part of the coming year.

The loads and revenue in the municipalities connected to the system during the year have greatly increased since connection to the system and the first delivery of Hydro power, and the development at Eugenia Falls has been delivering its surplus capacity to the adjacent towns in Simcoe County and the Severn system.

Plans are now progressing for an extension to the Eugenia plant to take care of these growing loads.

The negotiations begun during the year 1915, covering the purchase of the transmission system, sub-stations and distribution systems of the Pine River Light and Power Company, were completed and this Company's properties taken over by the Commission and merged into the Eugenia system on May 1st, the following properties comprising this transaction being taken over:

Orangeville distribution system and auxiliary steam plant by the municipality.

Shelburne distribution system by the municipality.

Twenty-five miles of 22,000-volt, single-circuit transmission line from Horning's Mills power house at Orangeville by the Commission.

Horning's Mills distribution system and sub-station buildings and equipment at Shelburne and Orangeville by the Commission.

The transformers, lightning arresters and other transmission equipment at the development by the Commission.

Severn System—

A remarkable growth in the load and revenue produced from same has been made by the Severn system during the past year.

The capacity of the Big Chute development serving the district was reached during the month of July, and connections were made to both the Wasdell's Falls and Eugenia Falls developments, in order that the demands for power in the Severn district might be taken care of satisfactorily. Practically all of the surplus power available in both of the latter generating plants is now needed to satisfy the power requirements of the district, and plans are being prepared for increasing the capacity of the Big Chute and Eugenia Falls plants, and also for new developments to take care of the increased and growing loads in the district.

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## ST. LAWRENCE, EASTERN, WASDELLS, MUSKOKA, NORTH BAY AND PARRY SOUND SYSTEMS

Numerous requests were received for a representative to investigate the requirements of a Hydro-Electric System and, in such cases, an engineer visited the municipalities and obtained the necessary information. Estimates, showing the figure at which power could be supplied to the municipalities, were forwarded by the Commission. A number of valuations and investigations, in connection with utilities have also been made for municipalities.

Engineering assistance has also been given to a great many of the operating towns, on matters pertaining to rate application, economical operation of their local systems, and increasing the light and power business.

During the year, work of the foregoing nature was taken care of by the department in the following municipalities:—Alexander, Arnprior, Aultsville, Bath, Billings Bridge, Brechin, Brock Tp., Carleton Place, Carp, Casselman, Cedarhurst, Dysart, Emily Tp., Ernestown, Faraar Point, Harrowsmith, Kinbourne, Kinmount, Lanark, Lyn, Rear Leeds and Lansdowne, Manotick, Maple Grove, Mattawa, Monck Tp., Moscow, Newboro, Nipissing, North Gower, Perth, Powassan, Richmond, Roblins Mills, South Crosby, Sturgeon Point, Sydenham, Westport, Winchester Springs, Woodville.

Notes on engineering assistance rendered other municipalities are given in the reports following:

### Almonte

Work on the remodelling of the municipal power plant and distribution system was begun in July, 1916. An addition was made to the power station, to accommodate a 250 K.V.A., 2,200-volt, generator and belted-exciter, and the

existing penstocks, turbines, etc., were thoroughly overhauled and altered. The water wheel units were re-set, the main shaft extended, and the whole arrangement strengthened by special castings and braces.

The distribution system, which before had been direct-current, was remodelled for 2,200-volt, three-phase distribution, and an efficient system of series street lighting is being installed. The current from the new unit was turned on on October 14th.

### Aultsville

Requests were received for estimates on a supply of power to Aultsville, Faraar Point, and the surrounding rural district. The municipality was advised that when the St. Lawrence system was extended as far as this district, it might be feasible to supply them with power.

### Beaverton

The distributing station was repaired and put into first-class operating condition, and a set of 22,000-volt lightning arresters installed. Negotiations are under way for a supply of power to be delivered to the surrounding farming district.

### Bracebridge

On request from the town officials, estimates were prepared on the cost of power to be delivered to the municipality from the Commission's South Falls plant. It is expected that the municipality will be in a position for further negotiations in the near future.

### Township of Brock

Arrangements are being completed for a supply of power to the farms in the townships,—same to be distributed from the substation at Gamebridge.

### Brockville

Requisitions have been received from several rural communities, for a supply of light and power, and some of these are being served by the municipality. Negotiations are at present under way for a further supply of power to the St. Lawrence system, and it is expected that load conditions in Brockville will shortly be much improved.

### Cannington

The laying of the substation floor was completed, and the interior of the station painted. A set of electrolytic lightning arresters was installed, to replace the former multigap arresters. Negotiations are in progress leading to the supply of light and power to farmers in the surrounding district.

### Cobden

At the request of the municipality, estimates were submitted on the cost of building and equipping a local Hydro-Electric plant and distributing system. The money by-law was submitted to the people and passed on January 1, and work was commenced early in May. An efficient storage system was supplied by constructing a conservation dam some distance above the site of the power house. The old regulating dam at the power house site was repaired and new head works, pen-

stock and power house built,—the power house having adjoined to it a dwelling house for the operator.

The power was first turned on on November 24th. The plant is operating very satisfactorily with a load of about 65 K.W. This development enjoys the distinction of being the smallest isolated development yet built by the Commission.

A 135 h.p. Boving re-action turbine is direct-connected to a Canadian General Electric Company 100 K.V.A., 2,300-volt generator. A flywheel was supplied to improve regulation on the outgoing lines.

### Cornwall

Exhaustive reports and estimates on the cost of a satisfactory supply of power to the town have been under consideration. Several requests have been received from residents and manufacturers for a supply of power to the town and surrounding district. Investigations are at present under way, with a view to supplying this district from the Commission's St. Lawrence system, in the near future.

### Gamebridge

Following the request from residents of this hamlet, estimates were prepared and submitted on the cost of the supply of light and power. Individual contracts were obtained from several residents. The distribution system will be built in the near future, as soon as the requisite by-laws are executed by the township officials.

### Gravenhurst

The Commission has acquired from Gravenhurst all rights and titles to that town's generating system at South Falls on the South Branch of the Muskoka River, and also has made a contract with Gravenhurst for a supply of power therefrom. The South Falls power house was remodelled and enlarged to serve Gravenhurst and Huntsville—the former, at 6,600 volts; the latter, at 22,000 volts. The plant was taken over and first operated by the Commission on November 1, 1915—the 6,600-volt transmission line to Gravenhurst being owned and maintained by the municipality.

In August, the accounts of the Corporation were revised to conform with the standards of the Commission.

Booster transformers have been installed on the municipality's incoming lines, to improve the regulation of the distribution system throughout the town.

### Huntsville

Following the requests of the town officials, estimates were submitted on the cost of a supply of power to the municipality, and also on the cost of remodelling the distribution system, which, formerly, had been single-phase. In March, an agreement was executed for the supply of 800 h.p. from the Commission's plant at South Falls. Work on the transmission line was begun early in the Spring, and this was carried on concurrently with the erection of a brick substation, and the renovation of the town distribution system. An up-to-date system of series street lighting was also installed. Power was first delivered on August 24, 1916, being carried over the line from the Commission's South Falls plant, at a pressure of 22,000 volts and stepped down to 2,200 volts at the new town substation, for distribution.

### Iroquois

Requests were received from the village Council for estimates on the cost of a supply of power to the municipality. After investigation, they were advised that it would be more feasible for them to remodel and operate their present plant, and this work has been undertaken by the municipality.

### Kemptville

Estimates on the cost of supplying power to the Corporation of Kemptville, from a source of supply in Merrickville, were prepared and submitted, and a comprehensive survey made of the requirements in the village and surrounding district.

### Kingston

In January, the Utilities Commission of Kingston sent in a request for estimates on the cost of power to the city. These were prepared and submitted, based on a supply of 1,500 h.p. On June 19th, in order that the urgency of the situation might be met, the ratepayers voted to ratify an agreement for a limited supply of power to be brought in over an existing pole-line from Kingston Mills. On December 2nd, a contract for the supply of 1,200 h.p., to be delivered from the Commission's Ontario System, at a price of $28 per h.p., was ratified by the local Commission, and later passed by the Council. The transmission lines for the supply of this power are now in course of erection.

During the year, the Municipal Accounting System of the city was, by request of the Utilities Commission, revised to conform with the standards of the Commission.

### Merrickville

Early in the year, the Commission was requested for information as to the advisability of entering into a contract with the Rideau Power Company, for a supply of power to the municipality. After investigation, the village Council was advised against this action, as at that time proposed. A by-law was, however, passed, on submission to the ratepayers, and the village is now being supplied from the Rideau Power Company's generating station.

A study of the water conditions on the Rideau River, is at present being made by the Commission's engineers, with a view to using power from this river for a comprehensive distribution system to supply the surrounding district.

### Mille Roches

An industrial survey was made in the village, to ascertain the probable requirements of power and light for residents in the village and outlying district.

### Morrisburg

Negotiations have been under way during the year, with a view to leasing the municipal generating plant, for use in supplying power to the St. Lawrence system. Detailed reports have been made, with a view to ascertaining the cost of the necessary repairs before the plant could be connected with the system.

### North Bay

The Nipissing Power Company, which supplies power to North Bay, was, in March, 1916, taken over by the Ontario Government and handed over to the Commission for operation in trust. This system is supplied from a generating station on the South River, near Nipissing Village. The power plant is equipped with two (2) three-phase, 450 K.W., direct-connected 2,200-volt units, with direct-connected exciters. The voltage is stepped up at the generating station to a pressure of 22,000 volts, and transmitted at this voltage to North Bay, Callander and Powassan, where it is, in each case, stepped down to 2,200 volts for distribution throughout the respective municipalities. In addition to the above, a 2,200 volt single-phase transmission line supplies light and power to the village of Nipissing.

Estimates were prepared and submitted on the cost of installing a duplicate feeder to supply power to the Trout Lake pumping station for North Bay Waterworks Department.

### Omemee

Following requests received from the village officials, estimates were submitted on the cost of a supply of power to be supplied from the Central Ontario System. An enabling by-law was presented to the people on January 1, 1917, and passed by a large majority. The proposed scheme includes the purchase and utilization of the present distributing system. An up-to-date series street lighting system will be installed. The distribution will be at a pressure of 4,000 volts, which provides for the extension of the lines into the surrounding rural districts without further transformation.

### Ottawa

In February, the City Commission executed a contract with the Ottawa & Hull Power & Manufacturing Company, for a temporary supply of 750 h.p. Investigations are now being undertaken to ascertain the cost of developing 4,000 additional horse-power capacity, at the Queen street station, to generate power for the proposed pumping plant at Lemieux Island.

### Parry Sound

On request from the town officials, estimates were prepared on the cost of a supply of power to the municipality to be transmitted from Chaudiere Falls on the French River. Requests were also received for estimates on the cost of further developing the present town plant and conservation system, and for the supply of power to the Canadian Explosives Company, located at Noebel. Negotiations with this in view are at present under way.

Engineering assistance has also been given to this municipality, in regard to the failure of certain apparatus.

### Prescott

Exhaustive investigations have been made, to ascertain the probable future requirements of light and power for the town.

### Renfrew

In November, 1915, the local Commission entered into a contract with the O'Brien Munitions Company, whereby they agreed to deliver to the Munitions Company a supply of 900 h.p. This, added to the existing load, made it

imperative that a further supply of power be secured. A timber dam was constructed at Golden Lake, on the Bonnechere River, for conservation purposes, which, owing to the excessively high water in the Spring of 1916, had to be partly blown out. The Commission was approached *re* a further supply of power and, after investigating conditions, proposed an addition to the present plant, by adding a new turbine and generator. This the local Commision decided not to do, and asked for estimates on the cost of a separate supply of power. Accordingly, estimates were prepared on a supply to be transmitted from either the first and fourth chutes on the Bonnechere River and, after consideration of the same, the scheme of developing the first chute was recommended. As a temporary source of supply, a second-hand generator was procured by the Commission and belted to the standby steam engine in the municipal generating station. The by-law to enable the town to raise debentures of the first chute development was defeated on September 2nd, by a small majority. In November, the town Council, with the approval of the Commission, purchased the holdings of the Renfrew Electric Company,—the same comprising a distribution system supplying light and power throughout the town.

### Smith's Falls

Estimates are at present being completed with a view to procuring a satisfactory system to supply Smith's Falls and surrounding district with light and power. Exhaustive surveys were made in the town and district, to ascertain industrial conditions and probable present and future loads.

### Sunderland

The township of Brock is arranging for a supply of power to be distributed from the substation at Sunderland.

### Wasdell's System

The No. 1/0 aluminium wire at present supplying this system is being removed and steel wire installed in its place, thereby affecting a very appreciable decrease in the cost of power to municipalities connected with the system.

### Washago

Negotiations have been carried on throughout the year for a supply of light and power to the village. After industrial surveys were made and estimates prepared, it was decided that the load is as yet too small to warrant the building of a necessary transmission line distribution system.

### Winchester

Repairs and improvements have been completed in connection with the Winchester substation. A satisfactory increase in power load has been procured for this section of the St. Lawrence system by the addition of the new condensed milk plant in the village of Chesterville.

## CENTRAL ONTARIO SYSTEM

The generating stations, transmission lines and distributing systems formerly controlled and operated by the Electric Power Company, Limited, and its subsidiary companies are comprised in the system now known as the "Central Ontario System." The territory served extends from Whitby to Napanee on the south and from Lindsay to Sulphide on the north.

All the holdings of the Electric Power Company were purchased by the Province of Ontario, as of March 1st, 1916; the purchase being confirmed by Act of Legislature, known as the Central Ontario Power Act, which is reproduced in its entirety on page 89.

As provided in the Act, the system was operated for several months by the staff of the Electric Power Company, as agents for the Province. By Order-in-Council, dated May 5th, 1916, the Hydro-Electric Power Commission of Ontario was charged with the operation of the property, and this obligation was assumed by the Commission on June 1st, 1916.

The electrical system is briefly described in the following pages, and in addition to this the property purchased by the Province, and now administered by the Commission, includes a number of gas-plants and waterworks systems, and one electric railway, all of which will receive further mention on succeeding pages.

### Generating Stations

Power is obtained from six generating stations on the Trent river, which are operated by the Commission, and which have the capacities indicated in the accompanying table. In most cases the concrete dams constructed by the Department of Railways and Canals in connection with the Trent Valley Canal are utilized for the power developments, and future developments to be made on the river will also utilize other similar dams located at various points between Trenton and Fenelon Falls.

In addition to the generating stations operated by the Commission, further supplies of power are obtained from the generating station of the Corporation of the Town of Campbellford at Dam No. 12, to the extent of 1,250 K.W., and from the Peterborough Hydraulic Power Company, from whose station at Dam No. 17, 1,120 K. W. is obtained.

DEVELOPED AND UNDEVELOPED WATER POWERS ON TRENT RIVER

| Power Site | Present developed normal capacity kilowatts | Total normal power which can be developed kilowatts |
|---|---|---|
| Dam No. 1 Trenton | | 2,500 |
| " No. 2 Trenton | 3,000 | 3,000 |
| " No. 3 } Combined | | 4,200 |
| " No. 4 } | | |
| " No. 5 Frankford | 2,600 | 2,600 |
| " No. 8 Meyersburg | | 4,800 |
| " No. 9 Meyersburg | | 3,200 |
| " No. 10 Ranney's Falls | | 6,100 |
| " No. 11 Campbellford | 3,000 | 3,000 |
| " No. 14 Healey's Falls | 6,000 | 9,000 |
| " No. 18 Peterborough | 1,500 | 1,500 |
| " No. 21 } Combined | | 2,000 |
| " No. 22 } | | |
| " No. 27 Burleigh Falls | | 1,800 |
| " No. 28 Buckhorn | | 500 |
| " No. 30 Fenelon Falls | 725 | 1,000 |
| | 16,825 | 45,200 |
| Power purchased from Corporation of Campbellford at Dam No. 12 | 1,250 | |
| Power purchased from Peterborough Hydraulic Power Co., Peterborough | 1,120 | |
| Total developed power available | 19,195 | |

The control of the flow of the river is being constantly improved, and it is hoped that still greater success will attend the efforts being made, to utilize to the fullest extent, the natural storage basins in the Trent Valley, thus securing a uniform and unfailing supply of electric power at all seasons of the year.

### Transmission Lines

The diagram on another page will indicate clearly the extent and nature of the transmission system. Operation is conducted at 44,000 volts on most of the network, the exceptions being the line between Fenelon Falls and Lindsay, which operates at 11,000 volts, and the line connecting Dam No. 2 and Dam No. 5, which operates at 6,600 volts. All future developments at and in the neighbourhood of Trenton, will operate at this voltage, and will all feed into a switching and transformer station at Dam No. 2, where the voltage is stepped up to 44,000 volts for transmission. The total length of transmission lines is 285 miles. Additional lines will be constructed for the improvement of voltage regulation, and the duplication of service to safeguard against interruptions. Wooden poles are used throughout.

### Substations

The following substations are connected to the transmission system and step-down the voltage to distribution or utilization voltage. Three-phase transformers are used entirely for capacities of 300 K.V.A. or larger.

The substation at Oshawa contains, in addition to transforming equipment, a stand-by unit consisting of a 400 K.W. generator, direct connected to a 615 H.P. Diesel oil engine. This unit is not used except when necessary in case of inter-

ruptions, but is kept in readiness at all times, and can be placed in operation in a very few minutes.

SUBSTATIONS

| Location of Substation | Total transformer Capacity, K.V.A. |
|---|---|
| Belleville | 2,250 |
| Bowmanville | 1,500 |
| Brighton | 300 |
| Canada Cement Co., Lehigh Mill | 3,000 |
| Canada Cement Co., Belleville Mill | 2,250 |
| Cobourg | 600 |
| Colborne | 100 |
| Deloro | 750 |
| Deseronto | 600 |
| Lindsay | 3,060 |
| Madoc | 480 |
| Millbrook | 100 |
| Napanee | 600 |
| Newcastle | 100 |
| Oshawa | 2,250 |
| Peterboro | 5,250 |
| Port Hope | 750 |
| Point Ann Quarries | 600 |
| Pulp Mill, Campbellford | 2,250 |
| Sulphide | 780 |
| Treaton | 1,350 |
| Total | 28,920 |

### Municipalities Served

The distributing systems, instead of being owned and operated by the Municipalities as on the Niagara and other systems, are operated directly by the Commission, until such times as the Municipalities may desire to purchase and operate them under Local Commissions. The Corporations of Whitby, Madoc and Stirling are exceptions, and these Municipalities already control their own distributing systems, obtaining their supply of power through the agency of the Commission.

The complete list of Municipalities served is as below:—Belleville, Bowmanville, Brighton, Cedardale, Cobourg, Colborne, Deseronto, Lindsay, Madoc, Millbrook, Napanee, Newcastle, Newburgh, Oshawa, Orono, Peterborough, Port Hope, Stirling, Trenton, Tweed, Whitby.

### Rates

The rates used by the former owners of the property have been continued in force pending the compilation of sufficient operating data to permit the determination of the cost of power delivered at the various Municipalities. It is expected that this will be completed early enough to permit of placing in effect a new schedule of rates in the Commission's standard form at the beginning of the year 1917. All flat rates will be extinguished as quickly as possible, and power contracts as they mature will be altered to conform to the Commission's standard form of contract.

### Future Developments

The demand for power throughout the district is increasing very rapidly, and in order to meet this demand, additional transmission lines will be constructed next year, and additional generating units will be installed at Healey Falls. It is also expected that new generating stations will be built at a number of the dams on the Trent river.

### Gas and Water Plants

In addition to the electric properties, the Gas Plants at Oshawa, Peterborough, Cobourg and Napanee, and the Waterworks Systems at Cobourg and Trenton are operated by the Commission at present, although it is expected that the Municipalities will desire to purchase these properties and operate them as municipal enterprises. Improvements have been made to most of these plants to cope with increased demand and to secure higher operating efficiency.

### Peterborough Radial Railway

This property is at present operated by the Commission, but as the City of Peterborough have signified that they would prefer to operate it, it is likely that the road will be purchased by the city during the coming year.

### Northumberland Pulp Mill

This mill is situated at Campbellford, and manufactures ground wood pulp. Supplies of raw material are obtained in the northern townships of the Counties of Hastings and Haliburton, and negotiations have been carried on with a view to the purchase of timber limits, which would assure a supply of pulpwood for many years, in addition to a large number of cedar poles. As the operation of this mill is outside the scope of the usual activities of the Commission, it is probable that negotiations now under way will result in the sale of the mill.

## Cobourg

For some years the waterworks intake pipe had been of insufficient capacity, and in a precarious condition from exposure to ice pressure and storms, and contracts were let in July to John E. Russell for the installation, and to The Thor Iron Works for the material, of a steel intake pipe 25½-inch diameter and 900 feet long, to be laid in a trench excavated in the rock bottom of Lake Ontario, together with a large suction well housed in an annex to the present pump house. This work has been completed with steel intake box, screens, new suction main and reservoir connections, at a cost of about $36,000.

At the same time the four motor-driven turbine pumps have had all the interior parts renewed, including impellers of larger diameter, to meet the demand for increased pressure.

Estimates have been prepared for the installation of gasoline-driven turbine pumps to replace the present steam standby plant, and for a sewerage disposal system to serve the pumping station and the engineer's residence.

At the gas works the old bench of 4 S has been replaced by a modern half depth bench of 4 S complete with hydraulic main and tar regulator. This bench meets the demand for gas except during the summer season, when the bench of 6 S is in use.

### Peterboro

Increased service given by The Peterborough Radial Railway has rendered necessary additional pit accommodation in the car barns, and a new pit to take three cars, with pockets for the convenient removal of wheels and axles, has been built.

The track within the paved area on the Jackson Park line has been fitted with continuous rail joints, with the result that car maintenance has decreased and the operation of this section of the railway has been considerably improved.

At the gas works, a small annex has been built at the rear of the boiler house, and a new oxide room and general storehouse is being built adjacent to the present workshop.

A new generator has been installed as a spare in order to enable the present generator to be properly repaired from time to time, and consideration has been given to the completion of a second carbureted water-gas unit with modern condensing and scrubbing equipment, also to the completion of the purifier plant, half of which was installed in 1913.

Valuations of the physical assets of the Radial Railway and the Gas Works commenced by the Electric Power Company have been completed.

### Oshawa

The rapid increase in demand for gas within the last few years has resulted in serious deficiency of holder capacity. The present holder was designed for the addition of a flying lift, and is of English manufacture. Owing to British Government restrictions, it has not been possible to obtain a quotation from the makers on the completion of this holder. The installation of a complete coal-gas plant has been under consideration, and additional land has been purchased adjoining the gas works property to accommodate such a plant, which would be of capacity sufficient to meet all demands for gas, except peak loads in summer, and these would be taken by the present water-gas units.

### Northumberland Pulp Company

Owing to certain changes in the wiring of one of the grinder motors, and the installation of an additional wet machine, to meet the heavy demand for pulp, the three hydraulic presses are now deficient in capacity and a fourth press is being built by the Boomer Boschert Company, of Montreal, to give 300 tons with the hydraulic pressure now in use in the mill, and an ultimate pressure of 600 tons with a capacity of 15 tons per day and reduction to 60 per cent. air dry.

In connection with these presses a triplex pump of comparatively low pressure is being added, which will accelerate the speed of the presses during the major part of the stroke, leaving the final heavy pressure to the present hydraulic pumps.

### Nipissing

Estimates and drawings have been made for a new building adjacent to the old gas house at North Bay, for storage and garage purposes, but it was decided that the work should not be proceeded with this year.

A sewage disposal plant was laid out, and is being built in connection with the power house at Nipissing, and in accordance with the requirements of the Public Health authorities.

Arrangements have been made and orders placed for the remodelling of the gate mechanism of one hydraulic turbine, the existing devices being insufficiently rigid to allow of proper control of the unit by the governor. The other unit in this station was treated some years ago in a similar manner with marked success.

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## MUNICIPAL ELECTRICAL INSPECTION

During the past year great activity has characterized the work of the department through the Province. The introduction of new legislation has placed the control of electrical installations in the hands of the Commission in a much more effective manner than existed before the Act of 1916.

At the present time there is some confusion between the Power Commission Act, the Cinematograph Act and the Mining Act, which should be adjusted. Experience during the past year has also disclosed the necessity for the introduction of some further amendments to the present regulations, but the present Act, together with the rules and regulations, has been very effective and tended to improve conditions greatly.

The introduction of compulsory permits has been very effective, and through its introduction the irresponsible wiremen, amateurs, and unskilled persons are now obliged to notify the department before they undertake to do any electric wiring for light or power, so that under a rigid enforcement of this clause promiscuous work will be reduced to a minimum. In order to enforce this law it has been necessary to subpoena a number of offenders to court, and in all cases the magistrates have at once seen the necessity and wisdom of the law, and fines have been imposed as required by the Act. This is creating a very marked respect for the Act, and is very highly commended by the better and responsible wiring firms throughout the Province.

In many large factories and other buildings where a local electrician or engineer has been in the habit of doing the wiring, making alterations and repairs, much very defective wiring and the mutilation of what was once good wiring was a common practice, and a method of controlling this has been formulated by the adoption of a system of monthly inspection at a nominal annual inspection fee. Under this system any concerns thus employing their own electrician are at liberty to proceed with such alterations or repairs to their wiring without the formality of obtaining a permit for each and every job. Upon payment of a small annual fee of from $10 to $100, according to the extent and proportion of the place to be thus inspected, the electrical inspector makes a monthly visit to each factory or building, going over all work done during that month, and reporting any defects to the owner, who is obliged under the Act to see that the defective work is corrected. Owners will then, in their own interest, see that their electricians, or others entrusted with this work, are competent. The introduction of this method is only being commenced now, and promises to develop to very large and profitable proportions.

During the past year we have been able to place trained inspectors in charge of all districts in the Province, rather than depend upon the services of local superintendents of supply companies, as was done in some districts. By a judicious distribution of inspection offices throughout the Province, there is hardly, with the exception of one small section in the extreme north of New Ontario, a municipality or community without electrical inspection.

Under a re-arrangement of the inspection districts we have in some places been able to relieve two or more inspectors, and place the districts they once controlled under other inspectors. This has been accomplished by consolidating the several small districts into one, and with the service of a small runabout the inspector is able to handle all the work to a much better advantage.

During the year there has been recorded 100,787 actual inspections made throughout the Province. This figure represents actual visits of an inspector to an electrical installation, and does not include a vast number of inspections on old work, which are made during the inspectors' rounds, of which no record is kept.

There is a marked increase in building activity, and a consequent increase in the work, and the prospects are that, with the introduction of the monthly factory inspection, the coming year will be an extremely busy one.

The new edition of Rules and Regulations has been published and largely distributed. This edition contains amendments to take care of new conditions which are ever presenting themselves in the way of evolutions and improvements in electrical construction work, and also contains under the same cover a copy of the Act.

We have enjoyed the good will and hearty co-operation of the best electrical firms in the Province, as well as that of the Fire Marshal, who has been active in probing the cause of alleged electric fires, and the Electrical Inspection Department has rendered him all the assistance possible.

All district inspectors report daily to the Chief Electrical Inspector at Toronto, who reports to the Chief Engineer.

A supervising inspector is constantly employed on the road visiting the various districts and checking up the work of the district inspectors, and generally assisting the Chief Inspector in the administration and general supervision of the department.

A number of new municipalities have been added to the large list contained in last year's report, and the wiring in many municipalities has been carefully gone over, and recommendations made by our inspectors towards eliminating dangerous wiring, with good effect. While a great deal has been accomplished in this respect, much more could be done if it were not for the scarcity of skilled labour. We have found owners of buildings, as a general rule, ready to heed the warnings of inspectors, and to proceed with such changes and overhauling as required by our inspectors, just so soon as labour and material could be found.

## MUNICIPAL PURCHASES AND SALES

The municipal electrical enterprises in Ontario require in the aggregate large quantities of poles, line wire, cross arms, insulators, transformers, house service meters and of everything needed for the construction and maintenance of their various projects.

This demand can, in a measure, be filled by individual municipal purchase, but this is not always satisfactory. Owing to the wide range in the variety of materials and in the requirements, the municipal officials may lack the equipment necessary to properly safeguard their interests, and may not know exactly what should be used and where it can be obtained to the best advantage. The requirements of an individual town are comparatively limited. It cannot always afford large quantities and accordingly has to pay higher prices. At times rush orders

may be placed for urgently needed material, which through lack of provision, may not be in stock. For these and other reasons individual effort of this kind often means through lack of co-operation the more or less indiscriminate purchase of smaller quantities at higher prices, and the absence of an effective means of control which would tend to standardize quality and efficiency.

If the large requirements of the municipalities as a whole were combined and centralized, there would be created a purchasing agency which could control the various commercial conditions so that each municipality could obtain, its comparatively smaller requirements under the favorable conditions attending competitive wholesale purchase.

To give practical effect to this centralized purchasing idea the Commission maintains a Purchasing Department whose services are offered to any municipality or Provincial institution in Ontario, whether connected with the Hydro system or not.

During the past year we have been buying for one hundred and fifty-three municipalities. Their total requirements, of over $700,000, have enabled us to obtain for them at prices lower than those previously available all of the many items required in the extension of their various projects. On transformers, lamps, watt-hour meters and rubber covered wire we have been able to effect savings of from five to fifty per cent. over the prices previously paid. These are only a few of the economies effected, but will serve to show what can be done by co-operation.

A feature of this centralized service to which attention should be directed is the possibility of intelligent discrimination. Low cost is important, but it should not be the only consideration. It is necessary to know that the article purchased represents good value for the money. We have on our staff men who are experts on the many materials and processes which enter into the make-up of the various items used. In addition, we have complete equipment for standardizing and testing. Full use of these resources is made by our Purchasing Department, so that it is in a position to know that the materials recommended represent the best values obtainable. We call attention to this as we have appreciated that such complete facilities are seldom available to the individual towns, and we want to make it perfectly clear that this service has been organized for their benefit and is available for the asking.

The reduction in Hydro rates has greatly enlarged the possibilities of electric service in the household and on the farm, and the sales of irons, air heaters, motors, and all of the many other utilities, have been greatly increased.

To assist the municipal officials in the promotion of this revenue producing business the Sales Department made a careful investigation of the merchandising conditions, and as a guide in formulating campaigns complete data was secured of the methods adopted by the leading electrical companies. This information has been condensed and is available for municipal use. A number of the municipalities have availed themselves of this service and have found that the broad gauged, progressive policies outlined have enabled them to show a very substantial increase in their sales of utilities.

In building up this business they have been further assisted by definite advertising campaigns, from which gratifying results have already been derived.

The services of the Sales and Advertising Department are freely offered to any of the municipalities in Ontario, and information in connection with this subject will be gladly given upon request.

## RURAL POWER

### USES ON A GROUP OF FARMS IN WATERLOO TOWNSHIP

A further report of the operation of Syndicate No. 1 is submitted for the year 1916, for purposes of comparison with the report on same Syndicate as submitted in the 1915 report.

As a result of the satisfactory operation of the outfit of this syndicate, 12 new farm contracts were signed on the Waterloo-St. Jacobs road, and two more syndicates formed.

### Waterloo Township Syndicate

WORK DONE JANUARY 1st, 1916, TO JANUARY 1st, 1917

**No. 1 Farm, E. C. Hallman**

| | |
|---|---|
| Silo filling | 30 ft. in 12 ft. x 42 ft. silo. |
| Threshing | 960 bushels wheat. |
| | 1,800 " mixed grain and oats. |
| Chopping | 1,900 " |
| Sawing wood | 15 cords. |

**No. 2 Farm, I. C. Hallman**

| | |
|---|---|
| Silo filling | 24 ft. in 14 x 39 ft. silo. |
| Threshing | 1,000 bushels wheat. |
| | 1,950 " oats. |
| Chopping | 2,000 " |
| Sawing wood | 18 cords. |

**No. 3 Farm, J. S. Stauffer**

| | |
|---|---|
| Silo filling | 30 ft. in 12 ft. x 40 ft. silo. |
| Threshing | 900 bushels wheat. |
| | 1,500 " oats. |
| | 800 " mixed. |
| Chopping | 2,200 " |
| Sawing wood | 10 cords. |

**No. 4 Farm, Noah Snyder**

| | |
|---|---|
| Silo filling | 15 ft. in 10 ft. x 22 ft. silo. |
| Threshing | 250 bushels wheat. |
| | 1,100 " oats. |
| Chopping | 1,200 " |
| Sawing wood | 15 cords. |

**No. 5 Farm, Uriah Snyder**

| | |
|---|---|
| Silo filling | 14 ft. in 11 ft. x 30 ft. silo. |
| Threshing | 500 bushels wheat. |
| | 1,000 " mixed. |
| Chopping | 700 " |
| Sawing wood | 15 cords. |

**No. 6 Farm, Alvin Schieffle**

| | |
|---|---|
| Silo filling | 15 ft. in 14 ft. x 40 ft. silo. |
| Threshing | 600 bushels wheat. |
| | 550 " oats. |
| | 1,200 " mixed. |

**G. Shanty**

| | |
|---|---|
| Threshed | 300 bushels. |
| | 1,000 " |

## Waterloo Township.—Syndicate No. 1

Uses January 1st, 1916 to January 1st, 1917

Rate—Service Charge $30.00; Power 4c. per K.W.H. Discount 10% from power only

| No. | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | T9tal | Total K.W.H. | Domestic | Power | Service Charge | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | K.W.H. Domestic Uses | | | | | | | | |
| 1 | 90 | 47 | 43 | 34 | 35 | 29 | 24 | 32 | 40 | 53 | 72 | 73 | 572 | 1,646 | 20.59 | 38.66 | 35.00 | 94.25 |
| 2 | 77 | 49 | 48 | 41 | 37 | 33 | 34 | 44 | 48 | 54 | 77 | 62 | 604 | 2,102 | 21.74 | 53.92 | 30.00 | 105.66 |
| 3 | 53 | 34 | 22 | 21 | 25 | 17 | 16 | 22 | 25 | 25 | 49 | 41 | 350 | 1,562 | 12.60 | 43.63 | 30.00 | 86.23 |
| 4 | 74 | 46 | 48 | 42 | 38 | 37 | 30 | 33 | 35 | 46 | 66 | 65 | 560 | 1,125 | 20.16 | 20.34 | 35.00 | 75.50 |
| 5 | 43 | 21 | 14 | 11 | 15 | 7 | 8 | 12 | 12 | 21 | 35 | 31 | 230 | 777 | 8.28 | 19.69 | 30.00 | 57.97 |
| 6 | 25 | 26 | 22 | 16 | 13 | 8 | 8 | 14 | 19 | 26 | 32 | 41 | 250 | 1,568 | 9.00 | 45.29 | 30.00 | 84.29 |
| | | | | | | | | | | | | | 2,566 | 8,720 | 92.37 | 221.53 | 190.00 | 503.90 |
| | | | | | | | | | | K.W.H. Power Uses | | | | | | | | |
| 1 | ..... | 91 | 73 | ..... | ..... | ..... | ..... | 362 | 110 | ..... | 438 | ..... | 1,074 | ..... | ..... | ..... | ..... | ..... |
| 2 | 120 | ..... | 128 | 170 | 87 | 35 | ..... | 331 | 579 | ..... | ..... | 48 | 1,498 | ..... | ..... | ..... | ..... | ..... |
| 3 | 36 | 91 | 83 | 141 | 43 | 26 | ..... | 317 | 82 | 45 | 348 | ..... | 1,212 | ..... | ..... | ..... | ..... | ..... |
| 4 | 80 | ..... | ..... | 65 | 61 | ..... | ..... | ..... | 28 | 37 | 294 | ..... | 565 | ..... | ..... | ..... | ..... | ..... |
| 5 | 32 | ..... | ..... | 62 | ..... | ..... | ..... | 129 | 22 | 30 | ..... | 272 | 547 | ..... | ..... | ..... | ..... | ..... |
| 6 | ..... | 78 | 68 | 65 | 63 | 14 | ..... | 59 | 20 | 34 | 563 | 294 | 1,258 | ..... | ..... | ..... | ..... | ..... |
| 7 | 264 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 62 | ..... | ..... | 326 | 326 | ..... | 11.74 | 9.00 | 20.74 |
| | | | | | | | | | | | | | 6,480 | 9,046 | 92.37 | 233.27 | 199.00 | 524.64 |

See Record of Detail of work done on page 187.

## ORNAMENTAL STREET LIGHTING

### REVIEW

The installations of "White Way" systems made in many Hydro municipalities during the past few years have been received with approbation by the public in general.

The success of such installations has encouraged engineers engaged in their design and construction to make further investigations, resulting in the production of lighting units of improved appearance, and more effective in the utilization of light. Economy in first cost and in maintenance has also resulted and equipment has been devised which will render the continuous operation of street lighting circuits more secure, and provide additional safe guards against accidents to employees.

As might be expected, the "White Way" system has attracted more attention than what is usually designated as the "ordinary" street lighting system, which is generally installed in residential districts. However, the equipment for the "ordinary" lighting units has been the subject of much thought, and the improvements which have been made are noteworthy. Improvements in this system of lighting are the more important as by far the greater area of streets illuminated comes within this class.

The gas-filled incandescent lamp has become firmly established, and is now being installed in all new "series" systems to the total exclusion of the arc lamp, as well as the evacuated incandescent lamp. The Commission's engineers have made special investigations concerning gas-filled lamps, which will be supplied in the near future to the Commission's specifications, resulting in a great saving to the municipalities.

Heretofore the use of the "series" system of street lighting has not been considered feasible except in cities and larger towns, where a considerable number of lighting units is required. Hence, the smaller municipalities have been debarred from obtaining the benefits of the "series" system, which is, in many ways, ideal for street lighting service. Due to recent developments in the regulating apparatus, which is required for the satisfactory operation of the "series" system, the latter is now available for even the smallest village.

### INSTALLATIONS

#### Almonte

A complete new street lighting system is now being constructed in this municipality under the supervision of the Commission. The existing D.C. arc lamps will be taken out of service.

#### Blenheim

A "White Way" system of ornamental standards fed by underground cable has been installed; the lights were put into operation during the week ending January 8th, 1916.

#### Cobden

A street lighting system is being constructed in Cobden under the Commission's supervision.

### Cobourg

At the request of the municipality the Commission has submitted plans and estimates for a new street lighting system to replace the present system of enclosed arc lamps.

### Ingersoll

The Commission's engineers, on the request of the municipality, made recommendations concerning the installation of a "White Way" system on Thames Street. This system is now being constructed by the local authorities, and all the equipment has been supplied by this Commission.

### Norwich

This municipality has been advised regarding the installation of a "White Way" system, and has constructed the same, the equipment being purchased through this Commission.

### Sarnia

A new system of street lighting is now under construction, planned and installed under the supervision of the Commission. Some 650-100 watt units are required for the residential streets, and 16-500 watt units in the commercial district. Combination railway and lighting poles of tubular steel are being erected and the "White Way" units will be mounted on them. The circuits will be carried overhead, except at the Square in front of the City Hall, and in the park at the Public Library.

### Petrolia

A "White Way" system according to recommendations from the Commission has been constructed in Petrolia. Lights were put into operation on April 25th, 1916.

### Ridgetown

A "White Way" system fed by underground cable was installed in Ridgetown and placed in service during the last week in December, 1915.

### GENERAL

Special equipment for Ornamental Lighting has been supplied to a number of municipalities; others have been provided with estimates or recommendations regarding existing or proposed installations; these municipalities include Amherstburg, Chatham, Dunnville, Exeter, Guelph, Huntsville, Kingston, North Bay, St. Catharines, Stratford, and Windsor.

St. Thomas White Way

Note the combination railway and lighting poles

St. Thomas White Way

Note the several lines of wooden poles on both sides of the street. These have been removed

## MUNICIPAL UNDERGROUND CONSTRUCTION

There has been but little activity in underground construction during the past year, in accordance with the general policy of eliminating expenditures for all works not absolutely necessary at the present time.

### Hamilton

Cables have been installed in the Joint Underground Conduit System, and are now being operated by the Hamilton Hydro-Electric Department and the Great North Western and Canadian Pacific Railway Telegraph Companies.

### St. Thomas

In connection with the new municipal sub-station, manholes and conduits have been installed to carry the distribution feeders underground from the sub-station to the overhead pole lines.

### Owen Sound

A twelve-duct underground run with manholes was constructed leading from the new municipal sub-station to the overhead distribution system. The cables were placed in operation in January, 1916.

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## ELECTRIC RAILWAY PROJECTS

A number of resolutions from Municipal Councils asking for reports on additional electric railway projects were received during the year. In some cases these resolutions were from Municipalities who had already requested to be considered in one or more lines in their particular district. No attempt has been made to keep track of these duplicate applications, but to date resolutions have been received from 15 cities, 47 towns, 51 villages, 8 police villages, 172 townships and from 7 counties or other similar governing bodies. A total of 300 resolutions has, therefore, been received since the passing of the first railway act. In response to these resolutions the Commission has made preliminary surveys on 2639.46 miles of line, and has gathered traffic statistics for approximately three-quarters of the district affected by such surveys.

The map of south-western Ontario as found on the following page shows in black the routes covered by the principal surveys that have been made in that section of the Province, and also in green the lines upon which reports have been made. The projects which have been voted upon and carried by the ratepayers are indicated in red. Other surveys not shown on the map were made as follows:—

1. Gravenhurst to Baysville and Hollow Lake.
2. Kingston to Cornwall.
3. Ottawa to Morrisburg.
4. Various lines in Prince Edward County.

In addition to engineering and traffic surveys considerable work was done during the year on preparation of standard drawings and specifications for construction and equipment of the proposed lines. This work is being carried on in a very careful way, as it is felt that considerable savings in cost of construction

and operating of the various lines will be possible if they are all built to conform to the same specifications.

The most outsanding events of the year as related to the proposed system of municipally-owned electric railways were:—

1st. The voting on the Toronto-London Line.

2nd. The commencement of the campaign for the Port Credit-St. Catharines and Welland-Bridgeburg Lines.

3rd. The remarkable success achieved by the London-Port Stanley Railway during their first year of service.

### Proposed Toronto-London Line

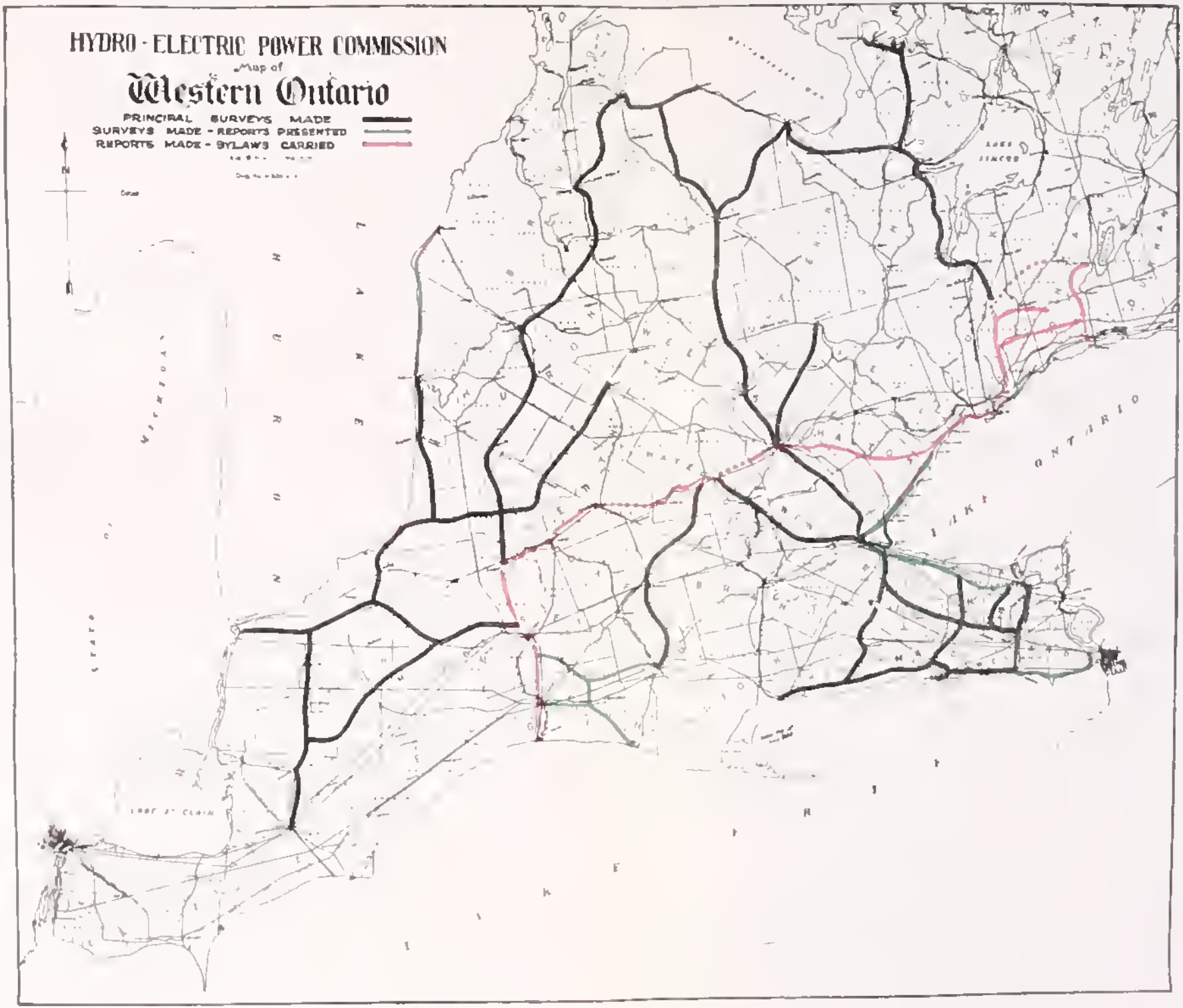
A report on the Toronto-London Line was given to the municipalities interested in the Fall of 1915, and voting on the By-laws took place at the annual elections in January, 1916. The report covered a 137-mile line extending from the foot of Yonge Street, Toronto, westward along the new Harbor Board property, under the Exhibition grounds and parallel and south of the G.T.R. to one mile west of Port Credit, where the G.T.R. is crossed. From this point the line proceeds in a westerly direction through Milton, Guelph, Kitchener, Stratford and St. Marys to London, where connection would be made with the London and Port Stanley Railway at the corner of Richmond and Bathurst Streets. The estimated cost of construction and equipment was placed at $13,734,155. Further details of the route and distribution of the guarantee can be obtained from the form of agreement as contained in the *Railway Act* for 1916, which Act will be found in this report under the heading of "Legal Proceedings."

A number of Public Meetings were held in the Municipalities voting on the By-law, at which representatives of the Hydro-Electric Railway Association and the Commission were present. Considerable opposition to the scheme developed, chiefly in the City of Toronto, where the Board of Trade opposed the scheme very strenuously both at the Public Meetings and in the daily papers. The opposition seemed to assist rather than retard the interest in the project, and the By-laws were carried by very large majorities in the 5 cities, 3 towns, 4 villages and 11 out of 14 townships interested. Some 5 townships that were assessed very small amounts for the guarantee, due to the line passing only close to or through a corner of the municipality, did not vote upon their By-laws.

The agreements with the municipalities that carried their By-laws were duly signed and were ratified by Act of Parliament in the Spring of 1916, but this Act, while legalizing the agreement, expressly states that no construction can be undertaken during the period of the war. Provision is made, however, for the carrying on of location surveys and the purchase of property for the right-of-way.

### Proposed Niagara District Lines

A report on a 60-mile line from Port Credit through Hamilton to St. Catharines was presented to delegates from the municipalities in that district at Hamilton on September 1st, 1916. The feeling of the meeting was so unanimously in favour of proceeding with the scheme that representatives of the Hydro-Electric Railway Association and engineers of this Commission were sent to the Council of the Municipalities with full details and resolutions were then passed asking the Commission to secure the necessary sanction of an agreement to provide for the construction and operation of the line and to secure such sanction in sufficient time so that voting on the proposition might take place on January 1st, 1917.


HYDRO-ELECTRIC POWER COMMISSION
Map of
Western Ontario
PRINCIPAL SURVEYS MADE
SURVEYS MADE - REPORTS PRESENTED
REPORTS MADE - BYLAWS CARRIED
N
LAKE ONTARIO

The ratepayers in the Welland-Port Colborne-Bridgeburg district have been desirous for a number of years of securing electric railway service through that district, and although the Commission was not prepared to give final decision on a through route to the Niagara Frontier, still they found from the traffic surveys that there was sufficient local business to make the construction of a local line a splendid proposition, irrespective of the location of the through line. A general report was at once presented to the Councils of the municipalities interested and they passed resolutions requesting the Commission to procure the sanction of the agreement so that voting on the proposition may take place at the annual elections in January, 1917.

Two lines will, therefore, be voted upon in January next, the first 60 miles in length extending from Port Credit westerly through Oakville, Burlington, Hamilton, Grimsby and Beamsville to St. Catharines, and the second line 28 miles in length extending southward from Welland to Port Colborne on the east side of the canal, and from thence easterly through Ridgeway, Crystal Beach and Fort Erie to Bridgeburg. The estimated cost of the Port Credit-St. Catharines line is placed at $11,360,363 and the Welland-Bridgeburg line at $2,208,716. The construction and equipment proposed for these lines would be of a very high standard and would be similar to that found on the London and Port Stanley Railway. A large proportion of the revenue will be received from the transportation of freight. The route through the City of Hamilton involves a high level bridge across the ravine at Valley Inn at the northern limit of the city, and the construction of a double-track line through the city, passing along the edge of Dundurn Park and hence on private right-of-way through the manufacturing district to the easterly boundary of the city. There would only be one or two minor highway crossings at grade within the city limits.

### London-Port Stanley Railway

This electric railway reconstructed and electrified under the Commissions' standard specifications, finished its first year of operation under municipal management on June 30th, 1916. Previous reports of this Commission contain information showing the manner in which this railway was assisted in the reconstruction and electrification and consequently the results achieved by this line may be used to illustrate the service that will be given over the various lines that have been favorably reported upon by the Commission. The report that has just been issued, covering this first year of operation indicates that the line after meeting all charges, including taxes, interest, rentals, etc., and full sinking fund charges on the new investment, yielded a surplus of some $24,000. This is considered a remarkable success, as sufficient rolling stock was not available to carry all the business that was offered, and also the first few months of operation were not profitable because many of the side tracks were not electrified and the Michigan Central freight business was withdrawn and given to a competing line.

Officials of the line were assisted at various times during the year with engineering advice on the location of new tracks and other similar matters. Designs were also worked up for a 70-foot motor car which would become a standard of the Commissions. These new specifications are now being used by the L. & P. S. railway to secure tenders on two of such cars for their own use. These cars will be of the three-compartment type and will be very similar to the 60-foot cars now operating on this railway. The same high standards of interior finish, such as mahogany trim, bronzed fittings, plush seats, etc., as found on the earlier cars are also to be used for these new cars.

During the year this railway constructed a modern car barn, and in this work were assisted by the Commission from time to time, and the design of this building and equipment will probably be used on the various lines that have been reported upon by the Commission. Engineers were loaned the railway company for the purpose of assisting them in working out details of maintenance of equipment and instructing the employees connected with such work.

## TESTING AND RESEARCH LABORATORIES

The activities of the laboratories have been extended in several directions during the past year. One of the most important extensions of the work has been the undertaking of comprehensive investigations of conditions on the high tension transmission lines: these include a theoretical study of voltage and current conditions at all stations, with a view to improvement in voltage regulation, a study of relay protection, of high tension insulators, of current and power supplied under short-circuit conditions at various points on the system, of the possibility of using steel for transmission line conductors and of many other subjects suggested by those mentioned above. These investigations are the result of the endeavors which are continually being made by the Commission, as well as by all large power companies, to perfect the transmission of power at high voltages. Their importance will be appreciated by the layman when the object in view is stated—to make it possible to supply electric power to the consumer without interruption and at constant supply voltage.

Reference should also be made to the label service operated by the laboratories in conjunction with the Electrical Inspection Department: further reference to this is made below.

During the year the handling of used apparatus by the Commission has been taken up systematically and a suitable method of carrying on this work was adopted: this is described in the November issue of the Hydro Bulletin. The inspection of this class of apparatus is done by the laboratories.

The number of mechanical and other non-electrical tests has so increased that it was considered sufficient to occupy the attention of a specialist in this line. Accordingly the Structural Materials Laboratory was organized and additional equipment for this class of work has been placed on order.

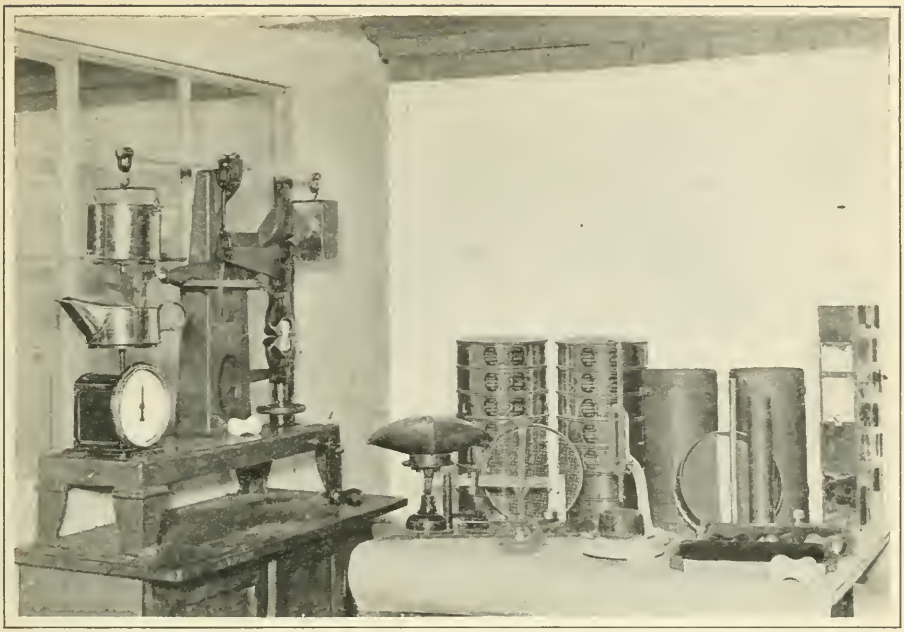
The following equipment has been added during the year:

An exciter for the 60-cycle alternator, a 33,000-volt transformer for testing oil and other insulation, a set of laboratory standard ammeters, voltmeters and wattmeters, a large number of portable and laboratory type meters, an integrating sphere photometer 84 inches in diameter, a 40,000-lb. Universal testing machine, a 200,000-lb. hydraulic compression machine, besides numerous smaller pieces of apparatus.

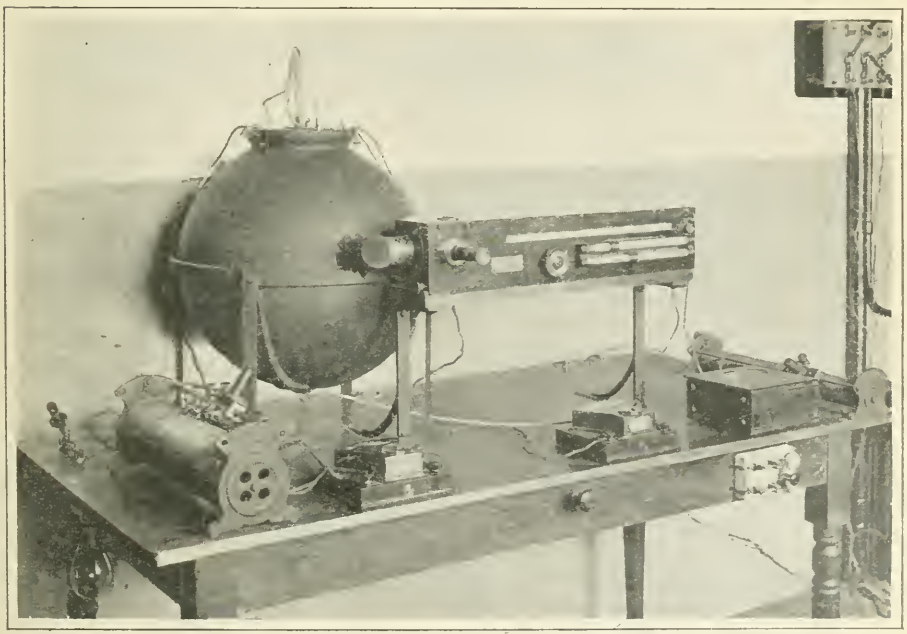
The extension of the test work has rendered the present space entirely inadequate to our needs and additions are at present being made which will make available for the laboratories about 20,000 sq. ft. When this space has been added the present testing equipment will be rearranged to suit the requirements of the laboratories.

### High Tension Testing Laboratory

Previous reports have indicated the general purpose and development of this laboratory and in harmony with the increased scope and activity of the Com-



Cement and Sand Testing Equipment



18″ Integrating Sphere Photometer, Lamp Testing Laboratory

mission as a whole, this department is continually widening its sphere of usefulness.

Routine tests are made on samples of all classes of apparatus purchased by the Commission from the high voltage tests on the insulators for the 110,000-volt lines and stations to small motors and switches for the small consumer. Apparatus is available from which any single-phase 25-cycle voltage up to 200,000 volts or 60-cycle voltage of 400,000 volts may be obtained and a great deal of work is done at 100,000 volts and higher.

One routine test which has an important value in the operation of the system is the testing of three hundred and fifty samples of oil each month, sent in from the high-tension stations on the system and taken from the 110,000-volt transformers and oil circuit breakers. In addition to the regular samples from twenty to fifty special samples per month are received from municipal stations. These are all tested for dielectric strength and records kept of the condition of this insulating medium are of inestimable value in forestalling failure of the apparatus due to faulty oil. Apparatus is under development which reduces the time and cost of these tests to a minimum and ensures very accurate results. Insulator testing also has a very important value to the system, and with the proposed extension of space available for the high-tension testing it is expected that high voltages and high frequency oscillations may be used that under previous conditions have been more or less unsatisfactory.

Special tests are made on apparatus purchased under guarantee by the Commission, either for its own direct use or for the use of municipalities for which it is acting in an advisory capacity. During the past year complete tests have been run on constant-current transformers, constant-potential transformers, motors, motor-starters, circuit-breakers, lightning arresters, fuses, rubber gloves and various other protective devices and apparatus. The result has been most beneficial in bringing the manufacturer and consumer to terms, sometimes by proving the good points of the article in question, at other times by noting the weaknesses and encouraging and advising the manufacturer as to the changes to be made in design or process of manufacture. The honest manufacturer invariably appreciates the fact that the laboratories exist for his benefit as well as for that of the general public and harmonious relations are the result.

Used apparatus, sold by one municipality to another, as the result of change in service supply, is sent for inspection to this laboratory, and the tests given to this apparatus are such as to test its ability to operate satisfactorily under any reasonable condition of service. Although the arrangements of this scheme were made quite recently, a considerable amount of material has already been transferred in this way.

The testing and approval of fittings and other apparatus has become an integral part of the work of this department, and activity among the manufacturers and dealers of this Province is evident from the amount of material inspected and the urgent need for its return as soon as approved. The laboratory co-operates in this work with the Inspection Department and operates a label service, by means of which approved apparatus is labelled. The utmost care is taken to approve no apparatus which would become hazardous when in or out of service, and suggestions are made as to the alterations necessary to meet with the approval of the Commission. In addition to approval tests in the laboratory periodical inspection is made in the factories with the object of seeing that no apparatus which does not comply with our requirements is placed on the market.

The scope of this department, as outlined in previous reports, includes general

tests on mechanical strength, quality of building materials, etc. The work of both electrical and mechanical sections has grown to such an extent as to warrant the formation of two separate departments, hence the general tests on strength of materials are not included in the work of the High-Tension Laboratory.

## Meter and Standards Laboratory

The increase in the amount of energy transmitted and distributed has reacted in several ways upon the activities of the Meter and Standards Department. The large volume of power handled necessitates an ever increasing degree of precision in its measurement; and the greater number of consumers means a greater number of metering units to be maintained in accuracy. These and similar conditions have resulted in this Department now handling approximately twice the volume of work of a year ago.

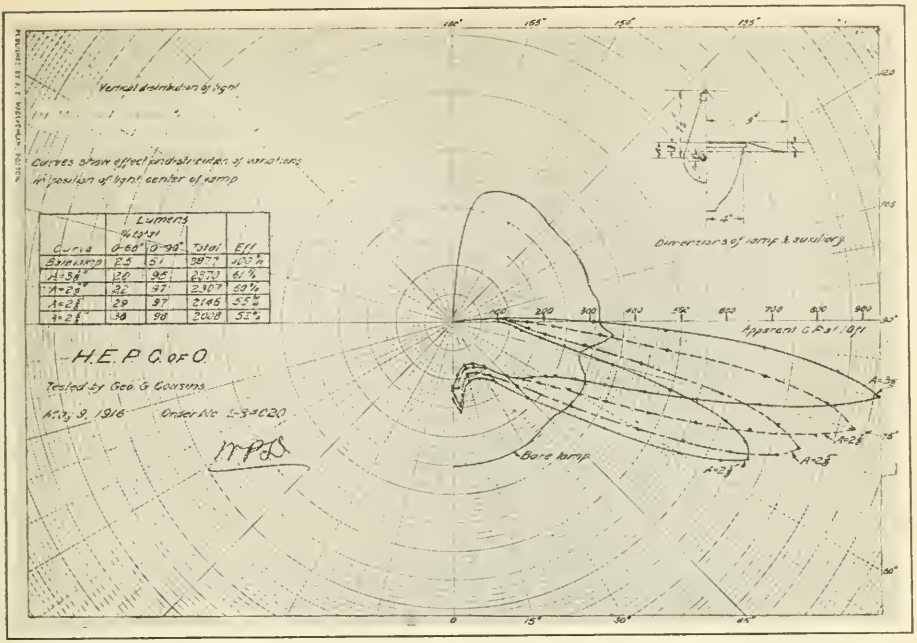
A complete set of Weston long scale standard indicating instruments has been placed in the laboratory, and pending further extensions to the building, temporarily installed; so that calibrations may be made on ammeters, voltmeters and wattmeters. By means of standard cells and standard resistances it is possible at any time to compare the accuracy of these laboratory instruments with the standards at Ottawa and at Washington. With the improved standardization equipment frequent checks are possible on the large number of portable meters used by the Laboratory and by the Operating Department. Meters are also being sent in by the municipalities and by electrical manufacturers in the Province for calibration.

The work of investigating various types of new apparatus as to suitability for installation upon the Commission's circuits has been energetically followed out. Complete comparative tests have been made on several improved types of watthour meters which have recently appeared on the market; and their high standing, according to the specifications indicates that the art of meter manufacture has advanced to a point where a revision of many of the ratings in the meter specifications is desirable, to give a useful value to the results. This revision is now under consideration. The investigation of demand indicators and other special types of metering apparatus has given much valuable information regarding the approach of the readings of various types to the true value of maximum demand, under loads of widely differing peak characteristics.

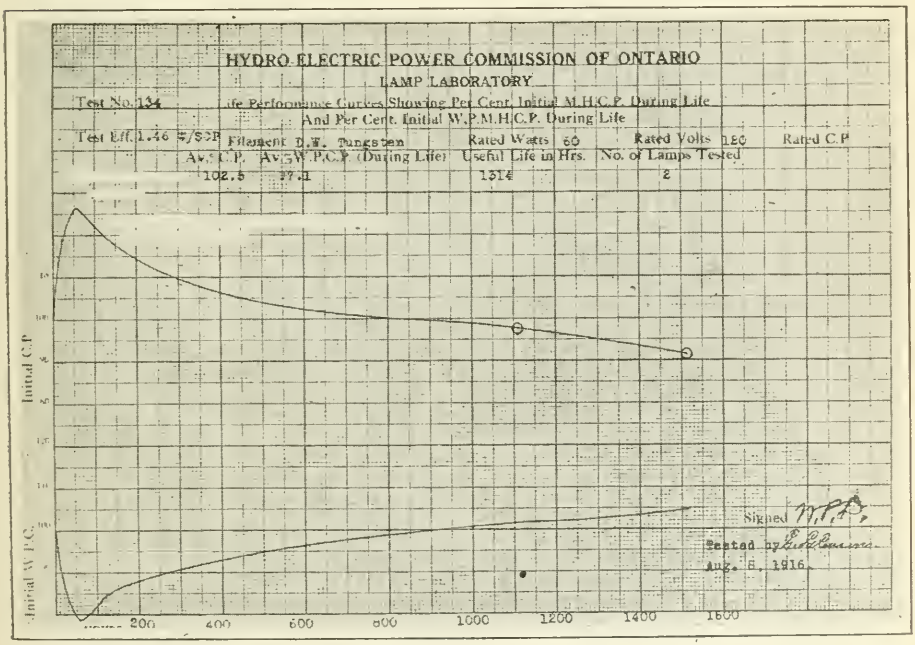
With a view to determining the most suitable indicating instruments for the switchboards, as the power systems are extended, a detailed comparative test was made on the meters of a number of manufacturers. These were submitted to practically every condition, normal or abnormal, under which such instruments might be expected to operate, and careful records made of their performance. The results so obtained contain much valuable information to guide in the selection of switchboard meters.

The problem of better protection of the great network of transmission lines against interruptions due to short circuits, grounds and other accidental conditions is being taken up by the Laboratory, and it has fallen to the lot of the Meter Department to make examinations and tests of a number of types of protective relays supplied for such work. Though these tests are not complete some very interesting results have been collected to show the comparative operation, as regards selective and other features under widely diverse conditions of load, temperature and location.

Considerable design work has been undertaken. This includes relays for motor protection, mechanical refinements to demand and other special meters, as




Curves of candle power distribution of a gas filled lamp equipped with prismatic refractor




Curves showing variation of Candle power and efficiency of a tungsten lamp with life

well as such auxiliary apparatus as may be required by the Laboratory for its own use. The construction of special meters, and the alteration of others to suit special conditions has occupied much time, the principal work of this class being the conversion of a number of polyphase wattmeters into "wattless component" meters. This consists in a simple modification of the resistances and connections so that by throwing a switch the converted meter may be made to read the reactive volt-amperes of a polyphase circuit. With a graphic "wattless" meter installed beside a wattmeter it is a simple matter to determine at any time the true power factor of the load, no matter how badly unbalanced the currents may be; while by throwing over the switch the instrument reads the power component and may be made to duplicate or replace the wattmeter in the circuit.

A large amount of repair work has been done in the meter shop for the municipalities. This has included watthour meters, defective, disputed or damaged through overloads or other causes, demand indicators, graphic and indicating instruments. In addition to this a systematic overhauling and adjusting of the meggers used by the Operating Department is carried on. By the nature of their work on insulator testing these meggers receive very heavy service and without periodic attention they would soon lose their usefulness.

The work which has shown the greatest increase is that of handling used apparatus. Old watthour meters in batches of from half a dozen to several hundred have poured in from all points. These are sorted out, the manifestly obsolete ones set aside and the others put through a schedule of cleaning, adjustment and recalibration. They are then either returned to the original owners or taken into stock to supply the great demand for used meters. Among those coming are many, some fifteen or more years of age, which because of obsolescense or inherently bad characteristics are immediately relegated to the scrap heap, where they are later joined by others which fail to show the required accuracy on the test board. For these an allowance is made to the owner for the value of the metal contained. About a thousand meters have in this way passed through the Laboratory.

The variety of meters carried in the storehouse stock demands supervision so that meters sent out on order will be suited to the requirements of the service. The Meter Department in doing this is often able to adapt to a special need meters which might otherwise lie unused on the shelves. Meters for Government inspection are taken into the test room where a representative of the Inland Revenue Department inspects them and applies the seal of the Department.

With a view to establishing a suitable basis of billing certain classes of power and lighting loads, several extended tests have been made on services of various classes. These include determination of demand by means of a graphic meter and a general consideration of all existing conditions. The loads so investigated include beside a variety of lighting services, printing offices, elevators, incline railways, metal works, woollen mills, electric signs and amusement parks.

A wide use has been made of the oscillograph, and by its use some very knotty problems made possible of solution. Early in the year the complete outfit was set up in the power house at Eugenia Falls and a complete examination made, with particular attention to special transformer connections. Photographic records were obtained of practically every electrical quantity in the plant; and an analysis of the oscillograms soon led to a decision as to connections best suited to the case in hand. Oscillographic records have also been obtained of currents flowing through the resistances used between ground and the neutral of the star connected 110,000-volt transmission lines.

A problem confronting the engineers of to-day is to design auxiliary apparatus to effectually prevent "flashing over" of high voltage rotary converters; and with this in view a number of oscillograms were obtained from the machines supplying the London and Port Stanley Railway. Records were obtained of operation under widely varying conditions of load and data obtained from these, which should result in great strides toward the elimination of flashovers and other troublesome features of machines of this type.

In addition to the special work described above the Meter Laboratory has been many times called into service to perform special tests for the Inspection Department, and to pass approval on relays and other apparatus manufactured either in the Commission's shops or elsewhere for use on the numerous lines and services throughout the Province.

## Lamp Testing Laboratory

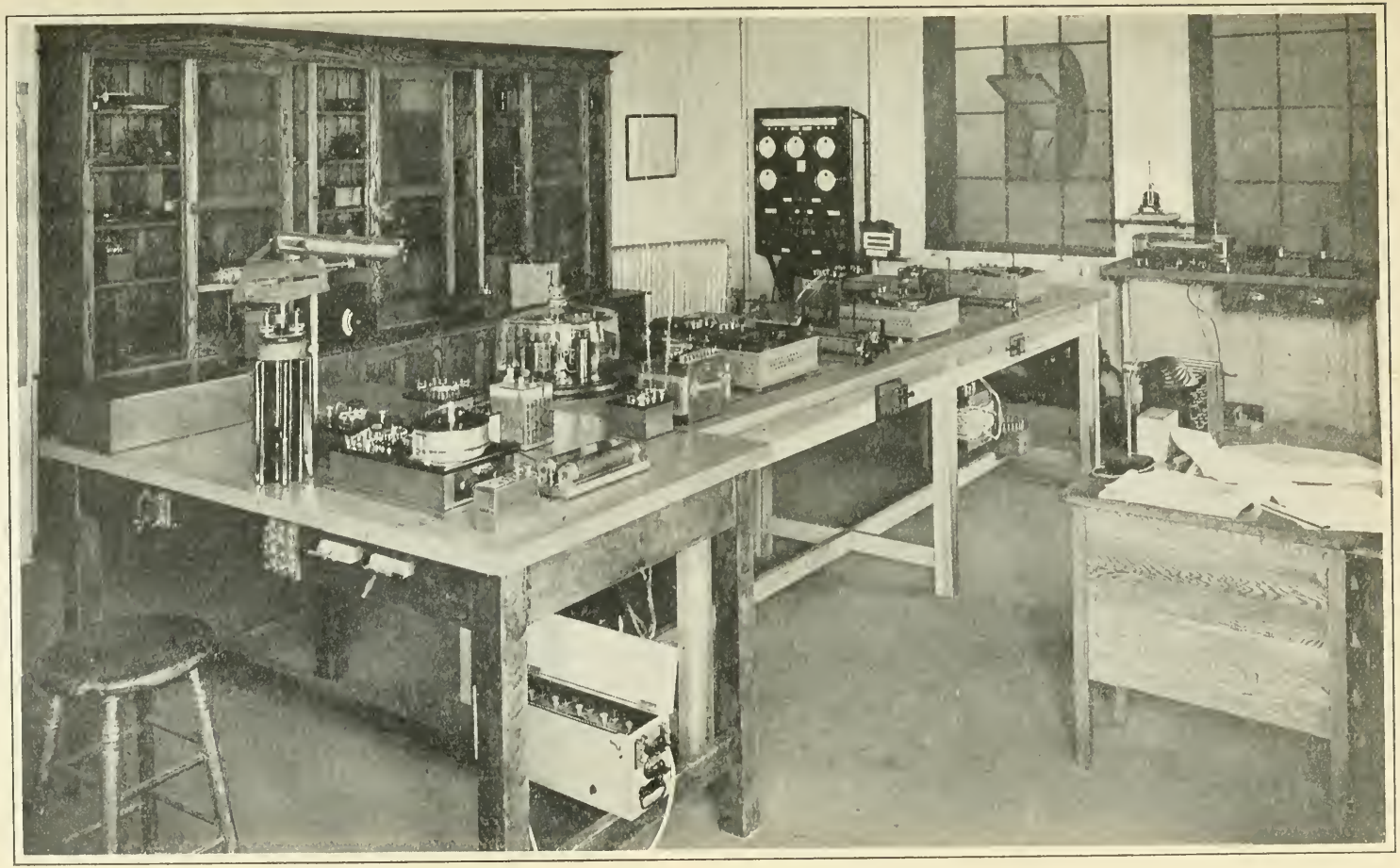
During the year just closed the lamp laboratory has continued the routine testing of lamps for stock. Such tests include tests for vacuum, rating and life tests, as well as inspection for mechanical defects. The volume of routine testing has been fully up to that of previous years, while the number of tests for parties outside the Commission has been considerably increased. These include complete tests on new types of lamps and life tests on manufacturers' samples.

A notable departure in our method of testing gas-filled lamps and vacuum lamps with concentrated filaments has been necessary. Candle power values for lamps of these types are no longer given in terms of horizontal candle power; the mean spherical candle power is the unit which is now used by the Commission to express the light intensity of such lamps, and the light output of the lamps is expressed in terms of lumens. This change is necessary because of certain inherent features of gas-filled lamps and because of different spherical reduction factors of concentrated filament vacuum lamps. These measurements are all made in an integrating sphere photometer. An 18-inch sphere was fitted up in the lamp laboratory and has been in use for the testing of the smaller sizes. An 84-inch sphere is being constructed of reinforced concrete for the testing of the largest sizes. This sphere is nearing completion. Specifications have been issued for the purchase of gas-filled lamps, embodying the changes in rating made necessary by the new methods of testing. This new method of test is in keeping with similar changes taking place in all lamp testing laboratories in America. All gas-filled lamps are now rated by most laboratories according to their lumens output or to their mean spherical candle power, the efficiency being expressed as mean spherical candle power per watt or as lumens per watt.

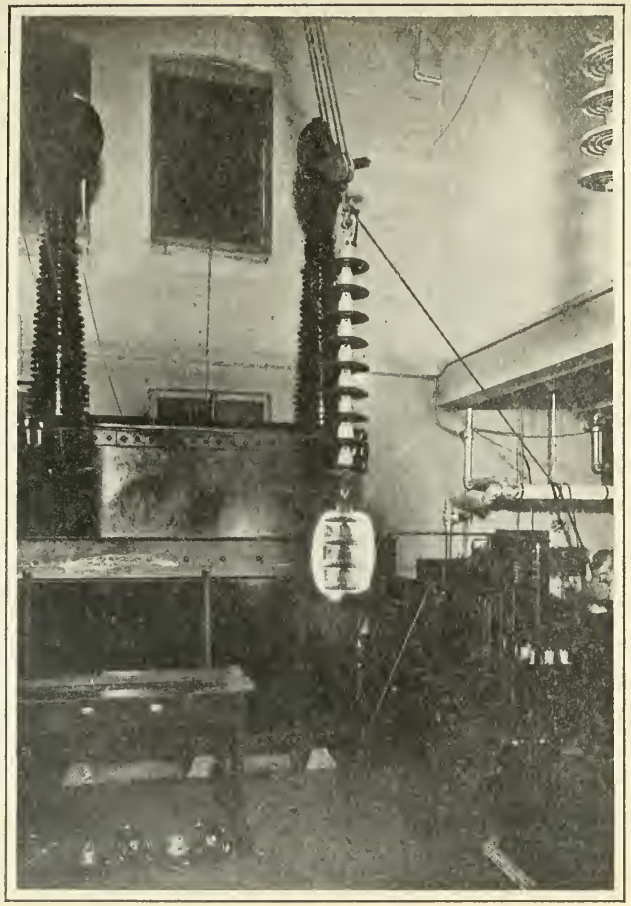
A new size of series lamp has been standardized by the Commission to consume 100 watts regardless of changes of efficiency that may occur due to improved methods of manufacture. The new 50 watt vacuum lamp recently placed on the market is being tested. Lamp frosting methods are being investigated and the laboratory is now in a position to frost all such lamps as may be required for the Commission's business.

A large number of tests have been made for various municipal managers. The Commission's policy of buying lamps in the open market for testing has been followed, thereby enabling us to keep in close touch with the output of many factories.

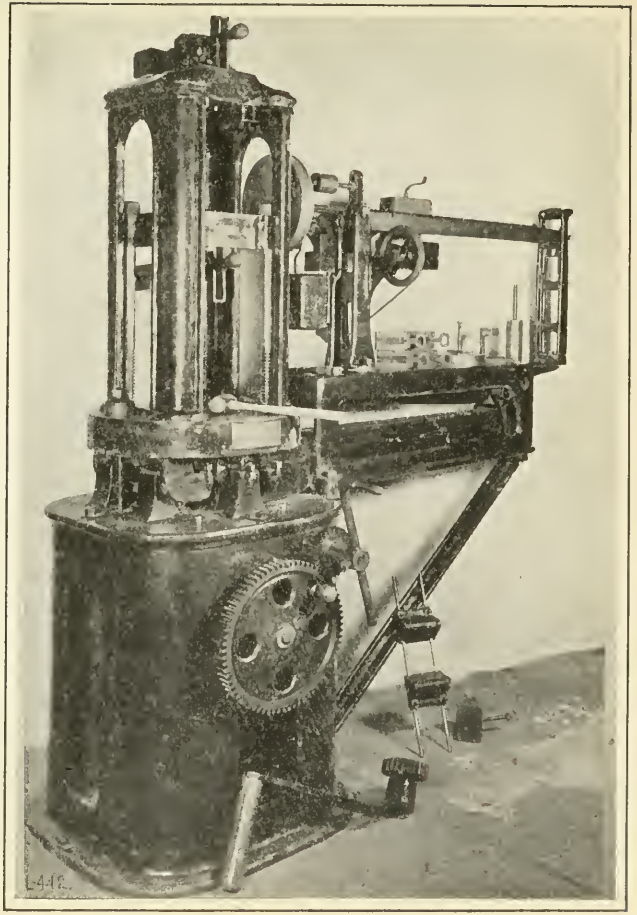
The work of this laboratory has been of value in detecting defective shipments of lamps, several cases of which have occurred within the past year.



Electrical Standards Laboratory



High Tension Test—Transformer Flashing Over String of Four Suspension Insulators—Voltage 260,000



Testing Machine—Strength of Materials Laboratory

## Illumination Laboratory

As the science of illumination advances new types of apparatus are produced and the Commission, through the illumination laboratory, is enabled to obtain first-hand data on new appliances as they appear. Several new types of street lighting fixtures were investigated during the past year as well as the modified application of older types. One of the problems arising out of the use of gas-filled lamps for street lighting is glare. The effect of bowl frosted lamps on the reduction of glare and their effects on the distribution of illumination when used in common fixtures were fully investigated. A very extended investigation of standard street lighting fixtures of the latest types was made. Representative samples of the product of several manufacturers were sent to the laboratory and were subjected to the most rigid tests to determine their optical, mechanical and operating characteristics. These tests included light distribution and efficiency, flashover tests on the insulators, puncture tests on film cutouts, accessibility of parts, general design and appearance and the effects of the various features on operation. For the first time in the history of the Commission diffusing globes were purchased on specification. A number of samples of various makes were tested and the make to be purchased was decided upon. On completion of the order the globes were tested to insure compliance with the specifications. The effect of different positions of the light-centre of lamps relative to the reflectors was studied with standard fixtures.

Illumination surveys were made of new installations of street lighting.

A number of fixtures and illumination tests were made for outside parties.

On the 84-inch integrating sphere being constructed in the laboratory provision is made for making efficiency tests on lighting units of all kinds. This feature is of particular value in making acceptance tests on globes and reflectors.

This department planned the lighting installations of the various departments of the storehouse extension.

## Structural Materials Laboratory

During the past year it became advisable to further subdivide the work of the laboratory and create a new department to take care of the testing of structural materials. This work had formerly been performed by the High-Tension and General Testing Laboratory, but since it was not related to the regular work of this department, being largely on a non-electrical nature, and as in the immediate future the demands of the Commission for this class of testing were expected to be considerable, it was decided that specialization in this field was warranted and a new department, called the Structural Materials Laboratory, was organized.

This new department is to take care of all tests and questions relating to the purely physical properties of the various materials of engineering, such as cement, aggregates and concrete, steel, iron and other metals, woods, oils, paints, etc., also all mechanical tests of clamps, wire, cable and various transmission line materials, tests of galvanizing and other rust-proofing, tests of water-proofing, heat insulating materials, wood preservatives and allied work. To this end the necessary equipment is being installed or will be installed in the near future.

Formerly the laboratory was equipped for the physical testing of cement and partially for the testing of sand and gravel. Since the creation of the new department additional apparatus is being intalled and the laboratory will shortly have a very full and complete equipment for both the above classes of tests. With the

additional apparatus soon to be installed the Commission will have one of the most completely equipped laboratories in this field in the Province, prepared to undertake all classes of physical testing and investigations on cement, concrete and concrete materials.

Since its inception this department has been mainly concerned with the studies of equipment and methods of testing for the work previously outlined. Besides this a certain amount of testing has been undertaken in connection with the present storehouse extension, the purchase of the Commission's transmission line hardware and other routine test work.

A preliminary report has been prepared covering the methods of testing, equipment and operation of a field laboratory to handle the necessary testing in connection with the large amount of concrete work involved in the New Niagara Power Development. The proposed field laboratory will be operated in connection with the permanent laboratory under the direction of this department and will involve the testing and inspection of the cement, sand, concrete, steel and other materials for this large undertaking. Preliminary to this work it is proposed to experiment extensively with a view of evolving the most suitable and economical methods of testing possible with the attainment of the object in view, also to make a complete study of the available concrete materials, their possibilities, limitations and drawbacks.

## Photographic Laboratory

The equipment of this department and the scope of its work have been described in a previous report.

The work handled by the Department has so increased during the past year that an increase of staff has been necessary. During the year about 400 orders passed through the laboratory, adding over 500 new negatives to the files and over 20,000 prints of various sizes were made for the different departments of the Commission. A considerable amount of field work was done by the official photographer necessitating several trips to various points on the system. These trips covered such subjects as electric railway development, rural distribution of power, surveys for power sites, etc.

# GENERAL ENGINEERING

## WATERWORKS

### Stratford

**Gasoline Driven Centrifugal Pumps for Standby Purposes**

During 1914 the question of providing pumping equipment to act as a standby to electric pumps in case of fire, as required by the Fire Underwriters, was taken up, and the Commission agreed to act as engineers for this work.

High speed gasoline engines for direct coupling to centrifugal pumps having been (at that time) recently tried in several places, their merits were investigated and it was decided that if a suitable reliable engine of this type could be found it would form an almost ideal standby, because of the small space occupied, comparatively light weight, low first cost, ease and readiness with which it could be started up, and the small amount of labour required.

After having settled on the capacity and head which the required pump should give, the Commission communicated with many manufacturers of high speed gasoline engines, or their representatives, in Great Britain and various European countries, as well as in Canada and the United States, and later issued specifications covering a complete pumping unit comprising a centrifugal pump mounted on a common bed-plate with, and direct connected to, a gasoline engine, some latitude being given with regard to pump capacity, head and speed.

Most of the firms, both in Europe and on this continent, which were asked to tender, expressed their inability to provide a suitable engine, owing either to the high speed asked for (1,200-1,500 r.p.m.) or horse power required (130-150 h.p.) or both.

The tender of the Storey Pump and Equipment Company, was finally recommended to the Waterworks' Commission of Stratford. This tender was for a bronze fitted, 3 stage, 8-inch horizontal centrifugal pump with horizontally-split casing, direct coupled to a 6 cylinder gasoline engine made by the Van Blerck Motor Company, of Munroe, Mich. The pump at a speed of 1,500 r.p.m. was guaranteed to be capable of delivering 1,000 Imp. g.p.m. of fresh water against a total head of 292 feet. The engine was guaranteed to develop 136 h.p. at a speed of 1,500 r.p.m., and to be capable of running continuously for not less than 10 hours at that speed, and at a speed of 1,700 r.p.m. for 2 hours continuously.

A governor was to be provided which would hold the speed steady to within plus or minus 3 per cent. between no load and full load, and which would prevent "hunting."

The consumption of gasoline was guaranteed not to exceed 0.66 Imp. pint per brake horse-power hour.

The Stratford Waterworks' Commissioners decided to purchase two of these pumps, and an order was placed for this number.

When the gasoline engines were ready at the maker's works, one of the Commission's engineers went over to witness the tests, which proved quite satisfactory, the guarantees being more than fulfilled.

The pumps also underwent rigid tests at the maker's works, and finally the completed units were tested.

Both pumping sets were then shipped to Stratford and erected. During this stage of the work air-starters were fitted on to the engines, operated by compressed

air. These starters comprise a small air compressor driven by the engine, an air tank and a selector valve.

The compressor fills the tank with air to a pressure of about 250 lbs. per square inch, and on starting the engine this compressed air is admitted in proper sequence to the cylinders, along with gasoline, by means of the selector valve; the engine is then started by the combined effect of the compressed air, and the combustion of the gasoline in the usual manner.

In connection with the provision of gasoline engines, the matter was taken up with the Canadian Fire Underwriters Association, and their views obtained as to the precautions required in view of the risk of fire; plans were later prepared and submitted to them; these received their approval, except in one or two minor features which were altered to comply with their wishes.

After erection these pumping units were submitted to further severe tests in Stratford, and found to fulfil the guarantees in all respects within the allowable limits of variation of plus or minus 2 per cent.

Since completion, the pumps have been utilized on several occasions in emergencies for giving domestic supply, and within a few months of installation had been found so satisfactory that the Stratford authorities entirely discarded their steam plant by taking it out altogether, and installed a small heating plant for use in winter.

There has been received from the Secretary of the Public Utility Commission of Stratford the following estimated comparison of standby service for steam and gasoline for one year, based on actual experience with the latter for about nine months.

| | Steam | Gasoline | Saving |
|---|---|---|---|
| Fuel and Supplies | $2,432.82 | $400.00 | ..... |
| Labour | 2,460.00 | 1,800.00 | ..... |
| Repairs (estimated) | 365.00 | 50.00 | ..... |
| | $5,257.82 | $2,250.00 | $3,007.82 |

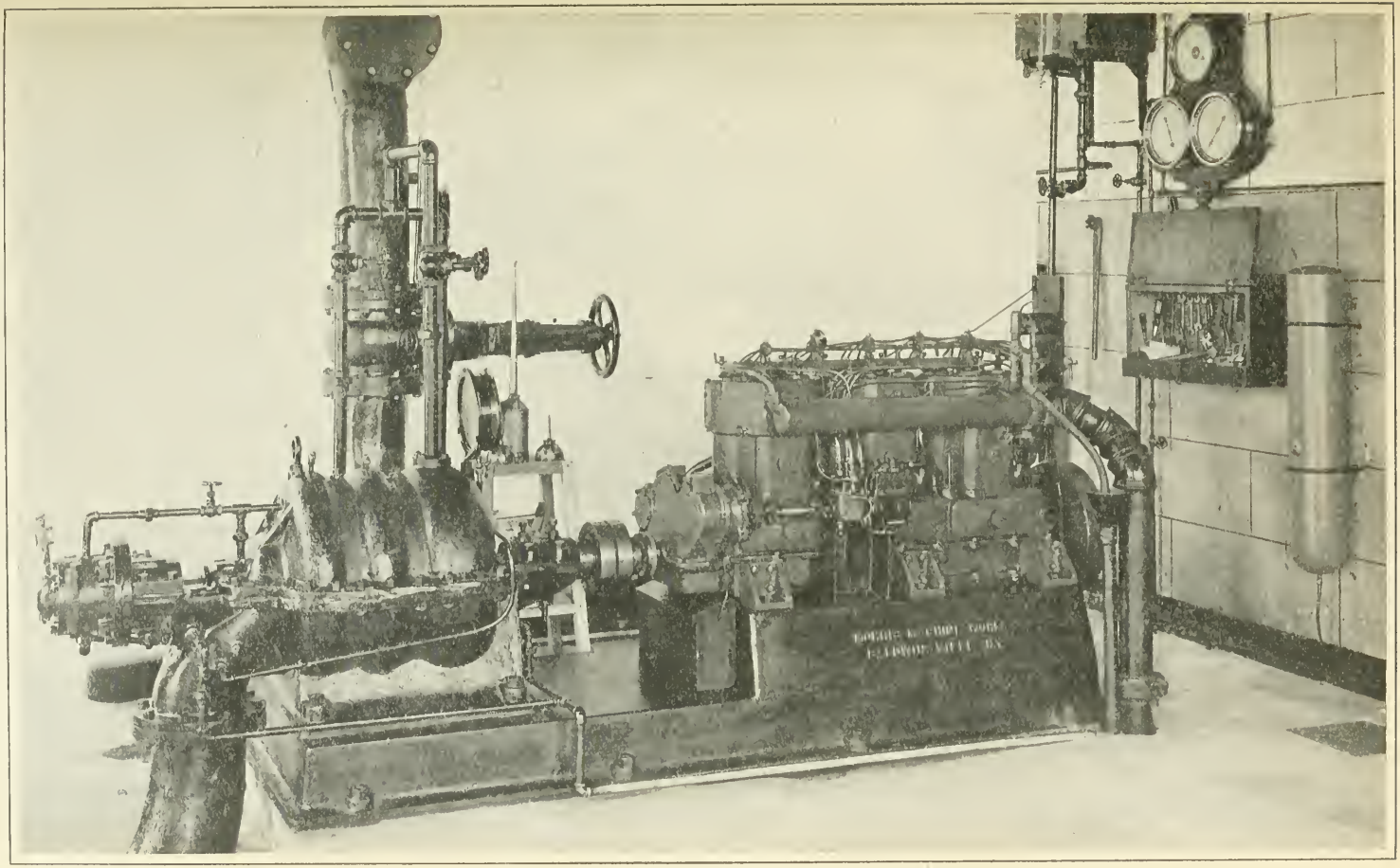
The actual saving is probably a little less than that shown, as it is understood that the steam pumps were employed in pumping for domestic purposes to a greater extent than is the case with the gasoline pumps.

However, since the total cost of this plant will not much exceed $10,000, it is evident that it forms a good investment for the city.

The two pumping sets, each of 1,000 Imp. g.p.m. capacity at 292 feet total head, occupy rather less space than that originally taken up by 1-1,750 Imp. g.p.m. steam pump together with its condenser, and the space occupied by the boilers, firing floor, coal storage space and smoke stack is available for other uses. Investigation shows that gasoline driven units such as these take up about one-tenth to one-fifteenth of the floor space required for equivalent steam plant. The extreme height of these sets does not exceed 3 feet 6 inches.

Since the pumps are required for standby purposes only, the wear and tear on them will be very small, and they should therefore last a long time; ordinarily they are only run about one hour or so a week each to make sure that everything is in good working condition.

For the same reason the fact that gasoline is very expensive compared with coal is of not great importance, as very little is actually used normally, and the high cost of operating merely during emergency does not therefore matter.



Gasoline Driven Standby Fire Pump, Stratford Municipal Waterworks

**Elevated Steel Water Tank**

During 1914 the question of conserving electric power by storing water, especially on peak load, came up for consideration and was referred to this Commission. The matter was gone into carefully, the final decision being that a tank of 500,000 Imperial gallons, elevated so as to give a pressure of 80 lbs. in the pump house, would make suitable provision for this purpose.

A site near the pump house was then chosen, investigation being made as to the suitability of the ground to carry so heavy a weight, that of the water alone being 2,500 tons.

Specifications for an elevated tank of steel, with alternatives for reinforced concrete, were then issued and tenders called for the work, eleven being received: eight of these were for steel and three for reinforced concrete structures.

Very careful attention was given to these tenders from the point of view of design, construction and appearance, as well as from that of the extent of the experience which the various tenderers had had in building such large structures.

After eliminating all other tenders for one reason or another, those of the Canadian Bridge and Iron Works and the Pittsburg DesMoines Steel Company, were the last two between whose bids a decision had to be made; the first named being actually awarded the contract on September 17th, 1915, for the erection of a 500,000 Imperial gallon steel tank, 39 feet 9 inches deep and 54 feet in diameter, elevated so that when full the water level would be 155 feet above the ground; the supports to consist of 8 legs constructed of steel, and the riser drum to be 6 feet in diameter.

This tank for its size is very shallow, having the special elliptical bottom designed by the Chicago Bridge and Iron Works, one advantage, of course, being that the water pressure varies only between small limits, while another is that the flat bottom acts as a diaphragm and takes care of the expansion and contraction of the riser drum. The large diameter of the riser drum obviates the need for a frost casing. The weight of steel in the whole of this structure is 250 tons, making a total weight on the foundations, when full of water, of 2,750 tons.

Special precautions were taken to insure that the fabrication of this structure should be carried out in Canada, and that Canadian labour should be employed to the fullest extent possible.

Specifications were also drawn up covering the concrete foundations. Tenders were called for on this work, and a contract was finally made with a local firm in Stratford for the construction of the foundations, and a valve chamber which was located at the foot of the tower.

These foundations had to be very massive, in the 8 footings for the tower legs and the footings for the 6-foot riser drum over 300 cubic yards of concrete were used.

At the foot of the tower it was necessary to build a large valve chamber to accommodate an electro-hydraulic valve and two ordinary gate valves. These three are all 16-inch valves.

The first named is operated from the pump house by turning a switch, which closes an electric circuit, thus actuating a small control valve which admits the water to one side or the other of a hydraulic piston, connected with the main valve, according to whether this valve is to be opened or closed. On receiving an alarm of fire the operator in the pump house can close the valve in the manner described, thereby shutting off the tank, when the water pressure can be immediately raised

to that required for fire purposes. The two hand operated gate valves are located one on either side of the electro-hydraulic valve for use in case of emergency or in the event of the last named valve needing repairs.

Drainage, ventilation and lighting of the valve chamber were also provided for.

The level of water in the tank is indicated on the side of the tank on a large vertical scale, marked in feet, the slider being actuated by a float in the tank. In the pump house the water level is read on the pressure gauge.

The tank has a balcony with a stout iron railing all around it, and access to this is gained by an iron ladder, which extends from the balcony to about 7 feet from the ground.

The whole structure received one shop coat and one field coat of graphite paint.

The tank is roofed over and may be entered by ascending the ladder (which reaches from the balcony to the roof) and climbing through a man-hole. This ladder is arranged to revolve around the whole tank, so as to give access to every portion of the sides and roof for inspection and painting.

Inside the tank at the bottom, in order to guard against the possibility of anyone falling down the riser drum, during construction, or at any future time, an iron grid is provided over the opening.

The total cost of this work amounted to about $30,000.

The advantages of such an elevated tank are several:—

1. There is available at all times for domestic supply a considerable quantity of water at a pressure ranging from 80 to 63 lbs. per square inch.

2. Water at this pressure can be used in case of fire for a few minutes until proper fire pressure is available or possibly altogether for small fires.

3. It is possible to do all the pumping outside of peak load hours, thereby effecting considerable economy.

4. The pumping conditions generally, and the pressure at services are rendered more uniform, thereby permitting the use of smaller units, as otherwise the available pumping capacity must be at least equal to that of the water peak.

### Niagara-on-the-Lake

At the beginning of 1916, the Commission was approached by the authorities of the town of Niagara-on-the-Lake, with a view to obtaining engineering advice in connection with their waterworks' pumping.

This work was taken up and after careful consideration of local conditions, specifications were issued and tenders called for two electrically driven centrifugal pumps.

Various tenders were received for these, the order finally going to the Storey Pump and Equipment Company, for 2 6-inch, 2-stage, bronze-fitted, centrifugal pumps, each capable of delivering 600 Imp. g.p.m. of fresh water against a total head of 180 feet, and each direct coupled to a Crocker Wheeler, 50 h.p., three-phase, 25-cycle, 2,200-volt, 1,500 r.p.m., squirrel cage induction motor.

The pumps when ready at the maker's works were tested in the presence of one of the Commission's engineers, but failed to fulfil the guarantees regarding efficiency, and the Commission therefore refused to accept them. It was then arranged that the makers should build two new pumps of a somewhat different pattern. This was done very expeditiously, and the new pumps, having proved satisfactory under test at the maker's works, were accepted.

Elevated Water Tower at Stratford Municipal Waterworks

Very careful tests were also witnessed at the maker's works on the motors, which were found to properly meet the guarantees.

The completed units were then erected at Niagara-on-the-Lake, and have been running satisfactorily ever since, i.e. about six months.

### Camp Borden

During the negotiations for the supply of electric power to Camp Borden, the matter of pumping plant was taken up with the Commission by the Military Authorities, as such plant was required very urgently.

The conditions having been looked into, steps were immediately taken to secure the necessary pumps, motors and auxiliary equipment. It was found possible to obtain from the Storey Pump and Equipment Company, two centrifugal pumps which they had in stock, and which would be suitable if driven at a speed of about 1,800 r.p.m.

Two 150 h.p., 2,200-volt, three-phase, 25-cycle, 750 r.p.m. motors were also procured, one from the Canadian General Electric Company, and the other from the Canadian Westinghouse Company.

The essential feature of this work was that it be carried out in the shortest possible time, and although it would have been preferable to use motors direct coupled to the pumps, it was impossible to do so, owing to the limited time available, the pumps were therefore arranged to be belt driven.

The necessary outboard bearings and pulleys were on this account obtained from the pump makers; suitable valves and pipe fittings were purchased, and the equipment was all shipped to Camp Borden and erected there.

This plant was put into operation within one month of the date on which the Commission took the matter up.

### Palmerston

At the request of the town authorities, specifications were issued in July for a vertical electrically driven centrifugal pump, capable of delivering 300 Imp. g.p.m. of fresh water against a total head of 150 feet. The pump was to be suspended about 14 feet below the motor in a steel framework.

After consideration of the various tenders received, an order for this equipment was placed with the Canadian Fairbanks-Morse Company, by the town officials on the recommendations of the Commission. It has already been tested and found satisfactory at the maker's works, and instructions have been given for immediate delivery to Palmerston. The pump will be erected in a well about 6 feet diameter and 35 feet deep, close to the pump house.

### Tavistock

During August of this year, the subject of pumping was brought before the Commission's engineers by the Reeve, asking for prices on an electrically driven pump for domestic purposes.

After having ascertained the local requirements, and upon instructions from the town, a 4-inch x 4-inch 60 Imp. g.p.m. Luitwieler pump to discharge against a head of from 65 to 104 lbs. per square inch, geared to a single-phase, 220-volt, 25-cycle motor, was purchased from the General Machinery Company; the motor was equipped with an automatic device, whereby the motor is started and stopped automatically according to whether the tank is empty or full.

### Ridgetown

At the request of the Waterworks' Commission in Ridgetown, one of the Commission's engineers witnessed a test carried out on two triplex 6-inch x 8-inch single acting pumps supplied by the Canadian Fairbanks-Morse Company, and designed to deliver 104 Imp. g.p.m. at a speed of 43 r.p.m. against a head of 125 lbs. These pumps are geared and each is belt driven from a 15 h.p. 750 r.p.m. 550 volt, three-phase, 25-cycle motor.

The test results were only approximate owing to the character of the testing equipment available, but were sufficient to enable the Commission to inform the town authorities that the plant as a whole was quite satisfactory, and that it was capable of doing the work required of it.

### Kingston, Chesley, Listowel, etc.

Estimates, reports and preliminary engineering work have also been carried out in connection with Waterworks' pumping problems for the following:—

Kingston, Chesley, Listowel, Preston, Lindsay, Exeter.

Progress has also been made in connection with work at Goderich and Galt, where certain revisions of existing plant were necessary. A contract for a motor for Galt has been arranged, and this has been installed. At Goderich a contract for a new pump has been let, which it is expected will be running early in 1917.

## INSPECTION OF MATERIALS

A good deal of inspection work has been carried out during the year.

Insulators for voltages of from 4,000 to 110,000 volts, and for telephone work, numbering nearly 100,000 have been inspected.

Two carloads each of insulator pins and hardware, as well as various sizes of copper, steel and aluminum wire and cable exceeding a total weight of 320 tons, were also inspected within the period.

## NITROGEN FIXATION

A considerable amount of investigation has been made during the year in regard to the fixation of atmospheric nitrogen, more especially by electrical processes, with a view to ascertaining the possibilities of developing a useful "off-peak" load.

Nitrogen is required in enormous quantities, in particular, for two purposes, viz:—as a fertilizing agent for crops and plant life generally, and also for the manufacture of explosives.

The largest natural source of nitrogen in a useful form is the great nitrate beds of Chili, and as an indication of the extent to which the demand throughout the world has grown, it is of interest to note that, while in the year 1830 about 1,000 tons of nitrate were exported from Chili, the quantity exported in 1912 was in the neighbourhood of 2½ million tons.

There are some other sources of nitrogen naturally available in the world, but the total visible supplies are comparatively limited, and scientists have for several years been anxious to find some source whence the element nitrogen could be made commercially available.

Electrical methods of obtaining this element in a useful chemically-combined form, while not the only ones which have been developed, have been brought to a point where they are of great commercial importance, as the cost of thus producing nitrogen compounds is competitive with the cost of Chilean nitrate, this latter, up to the present, controlling the market prices.

Plants for the fixation of atmospheric nitrogen, on a large scale, by electric methods, are in operation, under construction, or projected, in Norway, Switzerland, Spain, Germany, Italy, India, the United States, Canada, Japan, and possibly some other countries.

In all the countries named water power is, or will be, the source of energy for this rapidly growing industry, with the exception of Germany, where poor grade coal is to be used in generating electric power. It is probable that there are now some half million or more horse-power in use throughout the world for obtaining nitrate from the air electrically, the bulk of this being in Norway, which is favourably situated in respect both of cheap water power and available markets.

The electric methods which have been devised so far for obtaining nitrogen may be classified under two main headings, viz:—the electric arc process and the cyanamide process.

The former, comparatively, takes a good deal of energy, and since the cost of water power in Canada is relatively high, it is hardly probable that any of the arc processes would be a commercial success in this country, unless the production per unit quantity of combined nitrogen per kilowatt hour can be appreciably increased over and above what has hitherto been realized.

The cyanamide process, which is that in use at Niagara Falls, Ontario, has proved financially practicable there, and probably can be made so in other parts of Canada; since the raw materials are the air we breathe, coke, and lime, there are doubtless a number of points in Ontario where the obtaining of these essentials in sufficient quantity would be comparatively easy.

The chief points to be considered in connection with the commercial production of nitrogen compounds are—

1. The cost of electric power at the point where it is to be used.
2. The cost of transportation for the raw materials.
3. The size and availability of the markets.

The Canadian market for these compounds in normal times, at least, will be practically limited to the demand for fertilizer products, at present this is of limited dimensions, but is likely to grow at an increasingly rapid rate.

A good deal of activity has been evident in the United States in recent months in connection with nitrogen fixation. During the summer a number of meetings were held in Washington, D.C., in connection with nitrogen fixation and water power development. Some of these meetings were attended by a representative of the Commission. A great many records were examined at the same time.

Owing to the war, and the great shortage of power now being experienced, it is not possible to do more than keep in touch with the trend of events regarding this subject.

## ELECTRIC FURNACES

During the year the Commission has been investigating modern electric furnace practice, and the possibilities of this load in Ontario. The results of investigation so far show that where power is plentiful and reasonable in price the electric steel furnace is entirely practical.

The increasing number of these furnaces in the Province confirms this belief, and it is anticipated that the electric furnace will not only be applied to the production of fine steels, but that it will even compete with the open hearth furnace.

There is also every indication that electric smelting for iron, copper and other ores will be an important factor in the mining districts of the Province.

The high prices ruling for coke and coal and for steel products during this year, makes the electric furnace very attractive, and there is every indication that electric steel production in this Province will grow rapidly during the next year or two.

The electrical production of such products as calcium carbide, carborundum and other substances requiring high heat, is growing, and in this Province such production will undoubtedly take an increasing share of the surplus water powers.

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## RULES AND REGULATIONS

The drafting of rules and regulations governing outside overhead work has been in hand during the year, considerable progress having been made. These are now at a stage where they are being considered in detail by the Commission's engineers in conference, and it is intended later to submit a revised draft to electrical engineers outside the Commission's staff, for criticism and such further revision as may appear to be necessary.

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Ninth Annual Report

OF THE

# HYDRO-ELECTRIC POWER COMMISSION

OF THE

## PROVINCE OF ONTARIO

FOR THE YEAR ENDED OCTOBER 31st

## 1916

VOLUME II.

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*To His Honour,* Colonel Sir John Hendrie, K.C.M.G., C.V.O.,

*Lieutenant-Governor of Ontario.*

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the second volume of the Ninth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1916.

Respectfully submitted,

Adam Beck,

*Chairman.*

TORONTO, ONT., February 17th, 1917.

COLONEL SIR ADAM BECK, K.B., LL.D.,

*Chairman, Hydro-Electric Power Commission,*

*Toronto, Ont.*

SIR,—I have the honour to transmit herewith the second volume of the Ninth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1916.

I have the honour to be,

Sir,

Your obedient servant,

W. W. POPE,

*Secretary.*

# HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

COLONEL SIR ADAM BECK, K.B., LL.D., London, Chairman.

HON. I. B. LUCAS, M.P.P., Markdale, Commissioner.

COLONEL W. K. McNAUGHT, C.M.G., Toronto, Commissioner.

W. W. POPE, Secretary.

F. A. GABY, Chief Engineer.

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# OPERATION OF THE SYSTEMS

## NIAGARA SYSTEM

The operation of the Niagara System for the year 1916, was attended with gratifying success. In no other year, and especially since the war commenced, have the lines and apparatus of this system been called upon for such extraordinary duty. This condition was occasioned by the rapid recovery of industry together with the enormous development of the manufacture of war munitions in Canada.

During the months of November to April, inclusive, and from July to October, power was purchased for transformation and transmission from two, and indirectly three sources, the supplying plants being linked together by the Commission's Transforming Station at Niagara Falls. On April 30th, the temporary contract with the Toronto Power Company expired, and from this date until July 26th, when the first generating unit from the Canadian Niagara Power Company was connected, the total load of the Niagara System was carried by the Ontario Power Company. On August 21st, a second unit at the Canadian Niagara Power Company's Plant was parallelled with the first, and from this date until the end of October, the amount of power available from this company amounted to approximately 25,000 horse-power. As these generating stations were operating at maximum capacity, extreme caution was necessarily exercised in the operation of the system in order to preserve equilibrium at all times. Due credit is extended to the Ontario Power Company for the satisfactory service received during the year.

Electrical storms during the past year were much more frequent and severe than in previous years. The Niagara System was subjected to these storms on sixty different days. On eight days these storms traversed practically the entire system, and were particularly severe. The balance of the storms traversed only portions of the system, mainly in the Niagara Peninsula, Preston, Stratford and Chatham Districts, and were more or less severe. No total system interruption occurred from lightning causes during the summer, and when it is considered that the Commission has in operation approximately 1,200 miles of high and low tension lines overstreching a strip of Ontario approximately 215 miles long and averaging 60 miles wide, all lines being subjected to the accumulation of electrical discharges, which must be dissipated by passage to ground, the efficiency of the protective apparatus is strikingly evident.

Work of a special nature carried out by the Line Maintenance Department, and required by reason of the rapid increase of load, included the erection of a temporary 12,000 volt double circuit pole line of No. 4/0 copper conductor between the power house of the Canadian Niagara Company's station and a point (on the present line between the Hydro and Toronto Power Company Transforming Stations) approximately 1,800 feet south of the Commission's station. Both circuits of this pole line are still in service pending the installation of the balance of the underground feeders to the Canadian Niagara Power Company's plant.

The erection of a fourth No. 4/0 copper, three-phase circuit 15.5 miles long, on the 46,000 volt tower line between Niagara Falls and Welland was completed and placed in operation.

The single or three-phase circuit of No. 2 aluminum between the High Tension station and the Municipal Station at Dundas was replaced with a double circuit of No. 4 copper. Two 13,200 volt air break switches were erected in these

lines at the entrance to the John Bertram and Sons Foundry, and also near the Dundas Municipal Station for the control of the line of the village of Lynden. The wood pole line from the Dundas High Tension to the City of Hamilton, which was replaced by a steel tower line during the summer of 1915, was taken down, and the material placed in stock.

Short stretches of single circuit 26,400 volt lines were constructed to supply the Lake Erie and Northern Railway Company's sub-stations at Brantford and Simcoe, from the outgoing circuits of Brant High Tension Station. This work also included the erection of telephone lines and instruments, and the installation of an air break switch at the Company's Simcoe sub-station.

The wood pole Low Tension Line entrances at London and St. Thomas, and at the Weston Municipal sub-station were remodeled to accommodate new lines erected in these districts. In view of the many new customers added in the Stratford District, and the length of line necessary to serve them, it has been decided to raise the transmission voltage in this district from 13,200 to 26,400. To this end considerable re-arranging of the power and telephone lines was carried out in preparation for this change. For sectionalizing purposes two air break switches were erected at Mitchell in the double circuit line between Stratford and Seaforth. The telephone line between Stratford and Sebringville Junction was doubled by the erection of a circuit of No. 9 iron wire.

Some re-location of the 13,200 volt line feeding the Mimico Distribution Station from the Cooksville High Tension Station was necessary, due to the construction of the Toronto-Hamilton Highway. The portion of line affected extended from Port Credit to New Toronto.

A twenty-five "pair" lead covered telephone cable approximately 13,500 feet long, was installed between the High Tension Station and the Commission's new office building at Toronto. The cable was laid in the Toronto Hydro-Electric System duct line to the corner of Queen and William Streets and from thence to the office building on the concrete poles.

Few failures of any of the electrical or mechanical equipment of the High Tension stations occurred during the year. As the Commission, in common with other enterprises in Canada, was severely handicapped in obtaining delivery on additional apparatus required to cope with the abnormal demand for power, the present equipment in some of the stations was subjected to overload for short periods, but without any depreciating results. The difficulty, mentioned above was partially met by the transfer, where feasible, of transformers from one station to another. One of the more important changes of this nature was the transfer of two 750 kv-a transformers from Guelph to the St. Thomas station.

The Commission now employs a staff of nine highly trained meter experts whose regular duties consist of the periodic calibration and adjustment of the various types of graphic recording and indicating instruments located in the Commission's stations.

These men also attend to the setting and adjustment of all relays used to protect the Commission's lines and equipment.

Considerable time has been spent in perfecting refinements in connection with the measurement of power, which has been to a great extent apparently considered unnecessary heretofore by the majority of other organizations. These refinements extend from the periodic comparison of the Commission's portable standard meters with ultimate standards to the determination of the characteristics of instrument transformers of various types.

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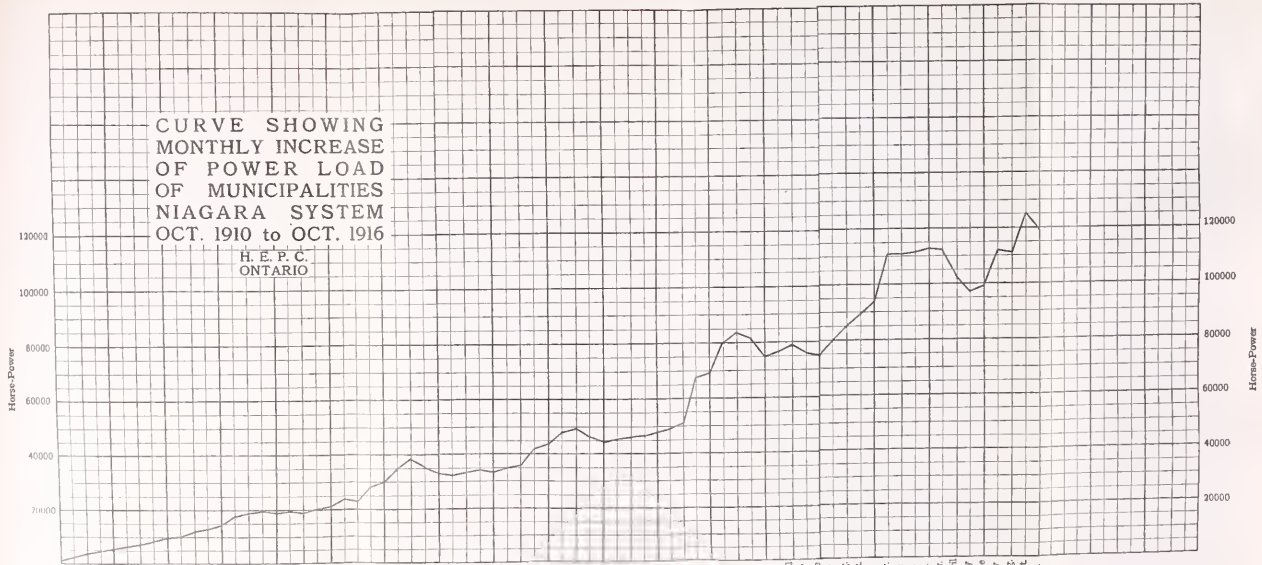
CURVE SHOWING
MONTHLY INCREASE
OF POWER LOAD
OF MUNICIPALITIES
NIAGARA SYSTEM
OCT. 1910 to OCT. 1916
H. E. P. C.
ONTARIO
Horse-Power
120000
100000
80000
60000
40000
20000
1910 Oct. Nov. Dec.
1911 Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
1912 Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
1913 Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
1914 Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
1915 Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
1916 Jan. Feb. Mar. April May June July Aug. Sept. Oct.

The services of the meter inspectors may also be requisitioned by any of the Commission's customers to inspect or adjust metering and relay equipment, or to conduct special measurements of any loads with regard to which the customer is desirous of obtaining particular information.

A long felt want was realized in the erection of the storehouses on the High Tension Station ground during the summer. These buildings will accommodate maintenance materials of a bulky nature. This work, together with the building of suitable approaches, was done under the supervision of the operators. Outside lights surmounting concrete poles were installed at Dundas, London and Kent High Tension Stations, with pleasing effect. Considerable improvement in appearance was accomplished in grading the grounds surrounding the High Tension Stations, and re-surfacing of the roads through the grounds from the highway.

A concrete roadway approximately 300 feet long and 6 inches thick, was laid across the flats at Preston, from the fair grounds to the Hydro-Electric Power Commission's Property. It is expected that this roadway will be unaffected by the heavy spring floods in this vicinity, which previously rendered impassable the original gravel topped roadway. An increase was made in the supply of cooling water for this station by the sinking of a well just outside the station, and the installation of a deep well pump for pumping the water directly into the cooling system. The supply originally obtained from the small creek in the flats had latterly become inadequate.

The tables given below show the load demands of the various municipalities as well as the increase during the year.

The plotted curve on another page shows the monthly increase in the load supplied from October, 1910, to October, 1916.

## NIAGARA SYSTEM

Capital Investments of the Niagara System in operation at October 31st, 1916:

| | |
|---|---|
| Right-of-Way | $1,034,920 58 |
| Steel Tower Transmission Lines | 3,403,585 05 |
| Telephone Lines | 129,706 69 |
| Relay System Lines | 54,537 32 |
| Conduit System (Ontario Power Co. to Niagara Station) | 96,698 64 |
| Wood Pole Lines | 1,785,208 01 |
| Transformer Stations | 2,797,209 61 |
| Distributing Stations | 221,130 02 |
| Total Operating Capital | $9,522,995 92 |

Total expenditures in connection with the operation and maintenance of Niagara System for the Fiscal year 1915-16:

| | | |
|---|---|---|
| Operators' Salaries and Expenses, including Supplies | | $92,521 66 |
| Maintenance of Steel Tower Lines | | 68,792 04 |
| " Telephone and Relay Lines | | 15,422 41 |
| " Low Tension Lines | | 20,350 09 |
| " Transformer Stations | | 68,883 54 |
| " Distributing Stations | | 7,514 28 |
| Administration | | 44,811 77 |
| | | $318,295 79 |
| Interest on Invested Capital | $371,404 94 | |
| Cost of Power at Niagara Falls | 997,257 60 | |
| | | 1,368,662 54 |

Summary of Financial Statement of the Niagara System operation for fiscal year 1915-16:

### Receipts

| | |
|---|---|
| Power delivered, including charges for Administration, General Expense, Operation, Maintenance and Interest | $2,038,792 32 |

### Disbursements

| | |
|---|---|
| Power purchased, including losses in Transmission and Transformation, Administration, General Expense, Operation, Maintenance and Interest | 1,686,958 33 |
| Surplus applicable to Sinking Fund and Depreciation Reserve Account | $351,833 99 |

| Municipality | Load in H.P. Oct., 1915. | Load in H.P. Oct., 1916. | Increase in H.P. |
|---|---|---|---|
| Toronto | 32,748 | 38,465 | 5,717 |
| Dundas | 362 | 548 | 186 |
| Hamilton | 7,694.5 | 8,562 | 867.5 |
| Waterdown | 63 | 71 | 8 |
| Caledonia | 40.2 | 55 | 14.8 |
| Hagersville | 106 | 97.8 | ..... |
| London | 5,971.5 | 7,359 | 1,377.5 |
| Thorndale | 28.4 | 34.8 | 6.4 |
| Thamesford | 19.3 | 26.5 | 7.2 |
| Guelph | 1,954.5 | 2,549.5 | 595 |
| Ontario Agricultural College | 153 | 160 | 7 |
| Central Prison Farm | 203.5 | 203.5 | ..... |
| Rockwood | 34.2 | 11.9 | ..... |
| Georgetown | 266.5 | 300 | 33.5 |
| Acton | 84.5 | 70.3 | ..... |
| Preston | 973 | 1,149 | 166 |
| Galt | 1,602 | 2,285.5 | 683.5 |
| Hespeler | 368.5 | 450.4 | 81.9 |
| Breslau | 21.5 | 30 | 8.5 |
| Kitchener | 2,285.5 | 3,262 | 976.5 |
| Waterloo | 717 | 815 | 98 |
| Elmira | 91 | 109.9 | 18.9 |
| New Hamburg | 84.5 | 76.4 | ..... |
| Baden | 157 | 196.5 | 39.5 |
| Stratford | 1,179.5 | 1,448 | 268.5 |
| Mitchell | 123.5 | 148.8 | 25.3 |
| Seaforth | 275 | 387.4 | 112.4 |
| Clinton | 98 | 101.8 | 3.8 |
| Goderich | 217 | 214.5 | ..... |
| St. Mary's | 339 | 434.3 | 95.3 |
| Woodstock | 1,048 | 1,170 | 122 |
| Ingersoll | 740 | 792 | 52 |
| Tillsonburg | 233 | 242.6 | 9.6 |
| Norwich | 100.5 | 171.6 | 71.1 |
| Beachville | 132.5 | 96.5 | ..... |
| St. Thomas | 1,658.5 | 2,011 | 352.5 |
| Port Stanley | 68.5 | 75 | 6.5 |
| Brantford | 1,552.5 | 1,783 | 230.5 |
| Paris | 381 | 398 | 17 |
| Port Credit | 57.5 | 59.6 | 2.1 |
| Weston | 178.5 | 197 | 16.5 |
| Brampton | 539 | 656.8 | 117.8 |
| Milton | 287 | 355 | 68 |
| Mimico | 127.5 | 156.1 | 28.6 |
| Mimico Asylum | 35 | 31.5 | ..... |
| Prov. Brick Yard | 171 | 136 | ..... |
| New Toronto | 80.5 | 291 | 210.5 |
| Toronto Township | 62.5 | 99.1 | 36.6 |
| Cooksville<br>Dixie | 23 | 22.7 | ..... |
| Windsor | 216 | 1,502.6 | 286.6 |
| Walkerville | 777.5 | 1,576.5 | 799 |
| Elora | 51.6 | 77.7 | 26.1 |
| Fergus | 68.5 | 92.5 | 24 |
| Welland | 3,038.5 | 5,626 | 2,587.5 |
| St. Catharines | 2,158.5 | 2,433 | 274.5 |
| Port Dalhousie | 104.5 | 79 | ..... |
| Strathroy | 143.5 | 203.7 | 60.2 |
| Drumbo | 18 | 10.9 | ..... |
| Plattsville | 32.2 | 57.6 | 25.4 |
| Woodbridge | 32.2 | 76.4 | 44.2 |
| Ayr | 35.5 | 36.2 | .7 |
| Princeton | 9.8 | 10.4 | .6 |
| Embro | 25 | 28.1 | 3.1 |
| Chatham | 431.5 | 509.4 | 67.9 |

| Municipality. | Load in H.P. Oct., 1915. | Load in H.P. Oct., 1916. | Increase in H.P. |
|---|---|---|---|
| Lucan | 33.5 | 30.2 | ..... |
| Bolton | 34.8 | 95.2 | 60.4 |
| Mount Brydges | 26 | 26.8 | .8 |
| Wallaceburg | 177 | 277.5 | 100.5 |
| Delaware | 7.2 | 8.9 | 1.7 |
| Tilbury | 60.3 | 63 | 2.7 |
| Simcoe | 114 | 103.2 | ..... |
| Waterford | 35 | 97.8 | 62.8 |
| Lambeth | 50.9 | 17.9 | ..... |
| Grantham Township | 12.3 | 17.4 | 5.1 |
| Dresden | 70 | 68.3 | ..... |
| Dorchester | 20.7 | 16 | ..... |
| Comber | 19.5 | 21.4 | 1.9 |
| Burford | 45.6 | 31.5 | ..... |
| Bothwell | 28 | 28.1 | ..... |
| St. George | 45.6 | 38.2 | ..... |
| Dutton | 47 | 44.9 | ..... |
| Thamesville | 52.9 | 45 | ..... |
| Blenheim | 53.6 | 77.7 | 24 |
| Lynden | 6.7 | 79.7 | 73.1 |

A list of the municipalities connected to the Niagara System during the last year is given below.

| Municipality. | Date connected | Initial Load in H.P. | Load in H.P. Oct., 1916 | Increase in H.P. |
|---|---|---|---|---|
| Ailsa Craig | Dec. 15th, 1915 ..... | 15.3 | 16 | .7 |
| Niagara Falls | Dec. 19th, 1915 ..... | 371.3 | 2,364.5 | 1,993.2 |
| Otterville | Jan. 15th, 1916 ..... | 10 | 11.7 | 1.7 |
| Petrolea | Apr. 25th, 1916 ..... | 134 | 146 | 12 |
| Exeter | May 4th, 1916 ..... | 57 | 77.7 | 20.7 |
| Milverton | May 18th 1916 ..... | 26.5 | 33.5 | 7. |
| Listowel | May 27th 1916 ..... | 90.3 | 117.9 | 27.6 |
| Palmerston | June 6th, 1916 ..... | 83.7 | 93 | 9.3 |
| Granton | June 29th, 1916 ..... | 10 | 12.4 | 2.4 |
| Harriston | June 30th 1916 ..... | 56.3 | 52.9 | ..... |
| Wyoming | Oct. 4th, 1916 ..... | 22.7 | 22.7 | ..... |
| Wellesley | Oct. 23rd, 1916 ..... | 13.4 | 13.4 | ..... |
| Burgessville | Oct. 26th, 1916 ..... | 8 | 8 | ..... |
| Tavistock | Oct. 26th, 1916 ..... | 28 | 28 | ..... |

## SEVERN SYSTEM

The Commission's generating station at the Big Chute on the Severn River was overtaxed toward the middle of the fiscal year by the relatively large increase of the power demand of this district, as on the Niagara System, the increase in load resulting from the same cause. The steps taken to remedy this condition will be mentioned later.

The operation of the generating station, sub-stations and transmission lines was very satisfactory and the increased load was taken care of in a very creditable manner. The Trent Valley Canal contractors completed certain work on the canal scheme in the vicinity of the generating station which greatly benefited the control of the head and tail water at this plant. Other special maintenance work was carried out by which the hydraulic regulation was improved.

A slight change was effected in the construction of the power and telephone lines of the Power House-Waubaushene Section where these lines cross Matcheash Bay, by the erection of an "A" frame structure with rock crib foundation to shorten this long span. This has eliminated trouble which was previously experienced at this point during very severe wind storms.

The temporary 22,000-volt pole type interswitching station at Waubaushene was moved to a new location on the Commission's property and altered slightly in design. The change was made to accommodate additional lines built from this point and for more efficient control of all lines from this operating centre.

The work commenced in October, 1915, on the stringing of a second telephone circuit between Waubaushene and the power house was completed and placed in operation in the late fall. The additional rod of right-of-way acquired on each side of the line from Midland to Penetang was cleared of trees through the bush section of that line.

Two new customers were connected to the Severn System lines during the year. Camp Borden, the new military training grounds prepared by the Department of Militia and Defence, was first supplied with power on June 29th, when the water pumps and the camp lighting was put in operation. The camp sub-station is fed over a single circuit of No. 6 copper tapped by means of airbreak switches on to the main transmission lines near the Barrie sub-station.

The elevator of the Canadian Pacific Railway at Port McNicoll was first supplied with Hydro power on July 25th. The Company's station is fed from a double circuit of No. 1/0 aluminum from the Midland-Penetang main line, which was double circuited from Waubaushene to this point during the summer. This company is being supplied with approximately 1,000 h.p. of off peak power at 575 volts during the season of navigation, in addition to approximately 250 h.p. for the operation of wharf machinery, lighting, etc., which will be utilized throughout the entire year. Below will be found a list of the demands of the various municipalities in October, 1915 and 1916, and the increase during the year.

## SEVERN SYSTEM

| Municipality | Load in H.P. Oct., 1915 | Load in H.P. Oct., 1916. | Increase in H.P. |
|---|---|---|---|
| Midland | 500 | 815 | 315 |
| Penetang | 415.5 | 495 | 79.5 |
| Collingwood | 572.4 | 888.7 | 316.3 |
| Barrie | 368.6 | 541.5 | 72.9 |
| Coldwater | 37.5 | 34.8 | ..... |
| Elmvale | 34.8 | 36.2 | 1.4 |
| Stayner | 81.7 | 56.3 | ..... |
| Creemore | 48.2 | 38.8 | ..... |
| Orillia | 1239.9 | 1414 | 174.1 |
| Waubaushene | 18.1 | 16.8 | ..... |
| Port McNicoll | 23.4 | 19.3 | ..... |
| Victoria Harbor | 29.5 | 26.8 | ..... |

### New Stations on Severn System

| Customer | Date connected | Initial load in H.P. | Present load in H.P. | Increase in H.P. |
|---|---|---|---|---|
| Camp Borden, | June 29th,1916 | 225 | 325.7 | 100.7 |
| C.P.R. Elevator | July 25th, 1916 | 600 | 1176.6 | 576.6 |

### Operating Statement, Fiscal Year 1915-16.

| | | |
|---|---|---|
| Capital Investment as at October 31st, 1916: | | |
| Big Chute Power Development, including Generating and Transformer Station | | $349,787 46 |
| Transmission Lines | | 335,497 20 |
| Distributing Stations | | 78,451 08 |
| Total Operating Capital | | $763,735 74 |
| **Revenue as per details below** | | |
| Midland Power Accounts | $10,856 88 | |
| Penetang " | 11,983 47 | |
| Collingwood " | 23,613 38 | |
| Barrie " | 13,970 30 | |
| Coldwater " | 1,007 77 | |
| Elmvale " | 1,335 50 | |
| Stayner " | 2,800 01 | |
| Creemore " | 2,254 47 | |
| Orillia " | 13,229 32 | |
| Waubaushene " | 640 19 | |
| Port McNichol " | 698 22 | |
| Victoria Harbor " | 1,762 98 | |
| Camp Borden " | 3,592 45 | |
| C.P.R. Elevator " | 6,949 99 | |
| | | $94,694 93 |
| **Expenditures** | | |
| Operators' and Patrolmen's Salaries and Expenses and proportion of Administration and General Office Expense | $18,152 30 | |
| Cost of Power purchased from Wasdell and Eugenia Systems | 6,366 26 | |
| Interest on Capital Investment | 29,920 27 | |
| | | $54,438 83 |
| Surplus applicable to Sinking Fund and Depreciation Reserve Accounts | | $40,256 10 |

## EUGENIA SYSTEM

The second generating station which the Commission has constructed was placed in official operation by Sir Adam Beck on November 18th when the municipalities of the Eugenia System received Hydro power for the first time. The service supplied on this system has quite fulfilled the Commission's expectations in every way.

The hydraulic and electrical features of the generating station have been given detailed description in previous reports.

The transmission system now comprises 195 miles of 22,000-volt and 24 miles of 4,000-volt lines. The municipalities now served on this system are Owen Sound, Mount Forest, Durham, Dundalk, Flesherton, Chatsworth, Markdale, Holstein and Chesley.

On June 13th a part of the Pine River System which was acquired by the Commission was connected to the Eugenia System by means of a thirty mile tie line built between Dundalk and Shelburne. The municipalities thus supplied were Orangeville, Shelburne and Horning's Mills. While satisfactory service was delivered since the acquisition of this system, the Commission is taking steps to place it on a par with the operating condition of the balance of the Eugenia System. This will consist of the erection of new sub-stations at Shelburne and Orangeville and complete renovation of the 22,000-volt lines between these points. The future outlook for this portion of the Eugenia System is very bright.

The actual operation and maintenance of the Eugenia System is carried on jointly by co-operation with the municipalities supplied. The success of this scheme was no exception to that enjoyed on the other northern systems.

Below will be found a tabulation showing the date of connection, initial load and load taken in October, 1916, of the municipalities on this system.

Eugenia System

| Municipality | Date connected | Initial load in H.P. | Load in H.P. Oct. 1916 | Increase in H.P. |
|---|---|---|---|---|
| Owen Sound | November 18th, 1915. | 899.5 | 992. | 92.5 |
| Flesherton | " " | 29.5 | 36.2 | 6.7 |
| Dundalk | " " | 50.9 | 50.2 | ..... |
| Durham | " " | 81.7 | 63.9 | ..... |
| Mt. Forest | " " | 156 | 98.5 | ..... |
| Chatsworth | December 17th, 1915. | 8 | 25.4 | 17.4 |
| Markdale | November 18th, 1915. | 67 | 60 | ..... |
| Holstein | April 3rd, 1916 | 6.8 | 16.9 | 10.1 |
| Chesley | June 18th, 1916 | 87 | 80.4 | ..... |
| Shelburne | " 13th " | 45 | 51.2 | 6.2 |
| Orangeville | " 13th " | 60 | 128.7 | 68.7 |
| Horning's Mills | " 13th " | 5 | 5 | ..... |

## EUGENIA SYSTEM

OPERATING STATEMENT, FISCAL YEAR 1915-16.

Capital Investment as at October 31st, 1916:

| | |
|---|---|
| Eugenia Falls Power Development and Generating Plant ..... | $638,854 14 |
| Eugenia Distributing Stations ..... | 51,944 33 |
| Eugenia Transmission Lines ..... | 409,355 93 |
| Total Operating Capital ..... | $1,100,154 40 |

### Revenue as per details below

| | | | | | |
|---|---|---|---|---|---|
| Owen Sound Power Accounts, | December | to | October.. | $22,536 94 | |
| Flesherton | " | " | " .. | 733 13 | |
| Dundalk | " | " | " .. | 1,232 32 | |
| Durham | " | " | " .. | 1,825 00 | |
| Mount Forest | " | " | " .. | 3,226 07 | |
| Chatsworth | " | January | " .. | 662 70 | |
| Markdale | " | March | " .. | 933 36 | |
| Holstein | " | May | " .. | 185 96 | |
| Chesley | " | July | " .. | 1,076 01 | |
| Orangeville | " | " | " .. | 979 12 | |
| Shelburne | " | " | " .. | 500 50 | |
| Hanover | " | September 16 to October 31 ..... | | 188 12 | |
| Severn System | " | October 6 to October 31 | | 2,520 13 | |
| Hornings Mills | " | ..... | | 70 17 | |
| | | | | | 36,669 53 |

### Expenditures

| | | |
|---|---|---|
| Operators' and Patrolmen's Salaries and Expenses and proportion of Administration and General Office Expenses ..... | $14,584 03 | |
| Interest on Capital Investment ..... | 34,205 94 | |
| | | 48,789 97 |
| Deficit on operation ..... | | 12,120 44 |

## WASDELLS SYSTEM

While the power demand of the municipalities fed from the Wasdells System does not indicate the same growth which characterized the operation of some of the other systems, very satisfactory progress was maintained. A thoroughly reliable and continuous service was provided. The power house, transmission lines, and sub-stations required no extensive repairs and are in first-class operating condition.

The excess capacity available at the power house over what was required for serving the Wasdells System was very conveniently and economically utilized to take care of the increased power demand of the municipalities of the Severn System.

A tie line between the power house and the Orillia substation at Longford, constructed during the summer, made this arrangement possible, and after parallel operation was commenced on July 24th, the Wasdells power house supplied an average load of 750 h.p. continuously throughout the balance of the year without difficulty. Thus the Big Chute generating station was relieved of the greater part of the power demand of the municipality of Orillia, at Orillia and at Longford.

### Wasdells System

| Municipality | Load in Oct., 1915 H.P. | Load in Oct., 1916 H.P. | Increase in H.P. |
|---|---|---|---|
| Beaverton | 54.9 | 56.3 | 1.4 |
| Brechin | 37.5 | 36.2 | ..... |
| Cannington | 46.9 | 57.6 | 10.7 |
| Sunderland | 20.1 | 52.2 | 32.1 |
| Woodville | 49.6 | 48.2 | ..... |

OPERATING STATEMENT, FISCAL YEAR 1915-16.

Capital Investment as at October 31st, 1916:

| | |
|---|---|
| Wasdells Power Development and Generating Plant | $136,658 47 |
| Wasdells Distributing Stations | 13,616 24 |
| Wasdells Transmission Lines | 114,406 03 |
| Total Operating Capital | $264,680 74 |

### Revenue as per details below

| | | |
|---|---|---|
| Beaverton Power Accounts | $3,156 97 | |
| Brechin " | 2,615 77 | |
| Cannington " | 3,163 11 | |
| Sunderland " | 2,018 92 | |
| Woodville " | 3,354 15 | |
| Severn System " | 3,846 13 | |
| | | $18,155 05 |

### Expenditures

| | | |
|---|---|---|
| Operators' and Patrolmen's Salaries and Expenses, including supplies | $3,461 02 | |
| Administration and General Office Expenses | 1,010 19 | |
| Interest on Capital Investment | 9,114 66 | |
| | | 13,585 87 |
| Surplus applicable to Sinking Fund and Depreciation Reserve Account | | $4,569 18 |

## PARALLEL OPERATION OF THE SEVERN, EUGENIA AND WASDELLS SYSTEMS

As mentioned above, some action became necessary to relieve the load conditions at the Big Chute generating station caused by the increase of the power demand of the municipalities fed from this plant.

The first step in this direction was the erection of a 22,000-volt tie line of No. 1/0 aluminum, seven miles long, between the Wasdells power house and the sub-station belonging to the Municipality of Orillia at Longford. The balance of the circuit was completed by the existing Orillia 22,000-volt lines via the Orillia transforming and switching stations and the Big Chute plant. To complete telephone communication between the plant arrangements were made with Orillia to erect a telephone circuit on the power line poles between Orillia and Longford.

The two plants were placed in normal parallel operation on July 24th, the Wasdells plant supplying practically all the load previously taken by Orillia from the Big Chute plant in addition to the load taken by the municipalities of the Wasdells System. Thus the primary object was gained of loading the Wasdells plant to a degree of economical operation and reducing the load on the Big Chute plant.

The power supply for the Severn System was further augmented by the paralleling of the Eugenia plant with the Big Chute plant. This was accomplished by the erection of a 22,000-volt tie line of No. 1/0 copper and No. 9 iron telephone circuit, twenty-four miles long, between the Eugenia power house and the Collingwood distribution station. The tie line was built in an incredibly short space of time and power from the Eugenia plant was first supplied to the Severn System on October 6th. Temporary metering equipment was installed at both the Wasdells and the Eugenia plants to measure the interchange of power.

The parallel operation of these systems has been entirely satisfactory, with added security of service to all customers supplied therefrom.

On another page will be found curves showing typical fall operating conditions for twenty-four hours with the three systems in synchronism.

## CENTRAL ONTARIO SYSTEM

The operation of the Central Ontario System has been entirely satisfactory since passing into the hands of the Commission. On account of the various points of supply total interruptions to service are almost impossible and have seldom, if ever, occurred. The operation of equipment has been most successful, no failures of any importance having taken place.

The steadily growing load at various points has necessitated some readjustment of equipment. One 750 k.v.a. transformer was moved from Port Hope to Oshawa, bringing the capacity of that point up to 2,250 k.w., and on account of the construction of the Government arsenal at Lindsay it was necessary to interchange two 300 k.w. units at Lindsay for two 750 k.w. units from Cobourg. At other points equipment of less importance has been replaced by apparatus more suitable to existing load conditions than that formerly used.

Practically all equipment which had become obsolete or unfit for service was scrapped and advantage taken of the high prices for scrap metals at present in force. Careful studies of the lines were made and whenever it was profitable the amount of conductor material was reduced to the most economical point. The material recovered in this way enabled almost all extensions necessary to be taken care of without delay and without the purchase of additional conductor.

present capacity of
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available.
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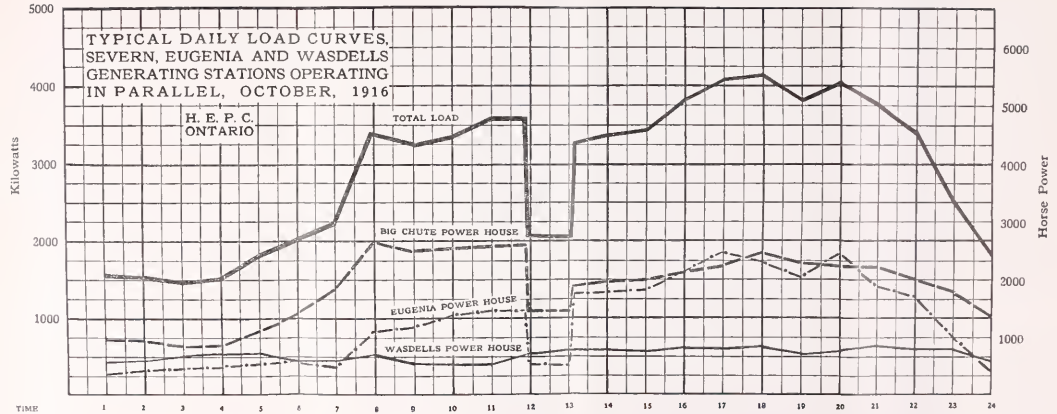
as been under the
put of the system
1915.

| 1916 | Increase in H.P. |
|---|---|
| | 2700 |
| | 4790 |
| | 2850 |
| | 1140 |
| | 2250 |
| | 1030 |
| | 1550 |
| | 4700 |
| | 3020 |
| | 1280 |
| | 1950 |
| | 2400 |
| | 1800 |

| | Load in H.P. October, 1916 |
|---|---|
| ..... | 217 |
| ..... | 1247 |
| ..... | 1568 |
| ..... | 20 |
| ..... | 20 |
| ..... | 375 |
| ..... | 502 |
| ..... | 75 |
| ..... | 72 |
| ..... | 670 |
| ..... | 1434 |
| ..... | 315 |
| ..... | 302 |
| ..... | 75 |
| ..... | 87 |
| ..... | 1062 |
| ..... | 3067 |
| ..... | 38 |


TYPICAL DAILY LOAD CURVES,
SEVERN, EUGENIA AND WASDELLS
GENERATING STATIONS OPERATING
IN PARALLEL, OCTOBER, 1916
H. E. P. C.
ONTARIO
TOTAL LOAD
BIG CHUTE POWER HOUSE
EUGENIA POWER HOUSE
WASDELLS POWER HOUSE
Kilowatts
Horse Power
TIME
5000
4000
3000
2000
1000
6000
5000
4000
3000
2000
1000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

While the growing load will undoubtedly soon overtake the present capacity of generating plants it has been possible to carry all load this year without taxing equipment and with a conservative amount of reserve apparatus available.

Loads at the various towns are shown in the table below and the curve of the weekly peaks shows the growth of load since this property has been under the control of the Commission. Another table shows the total output of the system for the current year and comparison of operation for the year 1915.

## Power Generated, Central Ontario System

| Month | Peak Load, 1915 | Peak Load, 1916 | Increase in H.P. |
|---|---|---|---|
| November | 15,100 | 17,800 | 2700 |
| December | 13,400 | 18,190 | 4790 |
| January, 1916 | 13,300 | 16,150 | 2850 |
| February | 12,560 | 13,700 | 1140 |
| March | 11,500 | 13,750 | 2250 |
| April | 11,610 | 12,640 | 1030 |
| May | 11,100 | 12,650 | 1550 |
| June | 10,600 | 15,300 | 4700 |
| July | 11,980 | 15,600 | 3020 |
| August | 14,570 | 15,850 | 1280 |
| September | 14,550 | 16,500 | 1950 |
| October | 16,200 | 18,600 | 2400 |
| Peak for year | 16,200 | 18,600 | 1800 |

| Municipality | Load in H.P. October, 1916 |
|---|---|
| Whitby | 217 |
| Bowmanville | 1247 |
| Oshawa | 1568 |
| Newcastle | 20 |
| Orono | 20 |
| Port Hope | 375 |
| Cobourg | 502 |
| Colborne | 75 |
| Brighton | 72 |
| Trenton | 670 |
| Belleville | 1434 |
| Napanee | 315 |
| Deseronto | 302 |
| Stirling | 75 |
| Tweed | 87 |
| Lindsay | 1062 |
| Peterboro | 3067 |
| Millbrook | 38 |

## MUSKOKA SYSTEM

The power development on the south branch of the Muskoka River at Muskoka Village which had been taken over from the Municipality of Gravenhurst was formally under operation by the Commission on November 1st. The purchase comprised the power site which had been partially developed by the municipality and the existing generating station and hydraulic works on the property. On November 1st power was being supplied to Gravenhurst at 6,600 volts and a small amount to Muskoka Village at 120 volts.

The Commission immediately proceeded with the extension and remodelling of the generating station to place it in first-class operating condition and to deliver the power covered by contract with the Municipality of Huntsville. A detailed description of the new hydraulic and electrical equipment of the plant will be found in another section of the report. Every effort was exerted by the Commission to supply uninterrupted service during the alterations to the station.

On August the 15th a 26 mile, 22,000-volt, No. 2 S.R. aluminum line to Huntsville distribution station was made alive for test. The sub-station was placed in operation permanently on August 25th.

All construction details at the power house were not completed at the end of October, which was due to the difficulty in obtaining reasonable delivery of materials.

The peak load demands of the Municipalities of Gravenhurst and Huntsville for the month of October were 235 and 580 h.p. respectively. The Commission will be in a position to supply standard service and anticipates a very successful future for the Muskoka System.

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3 03

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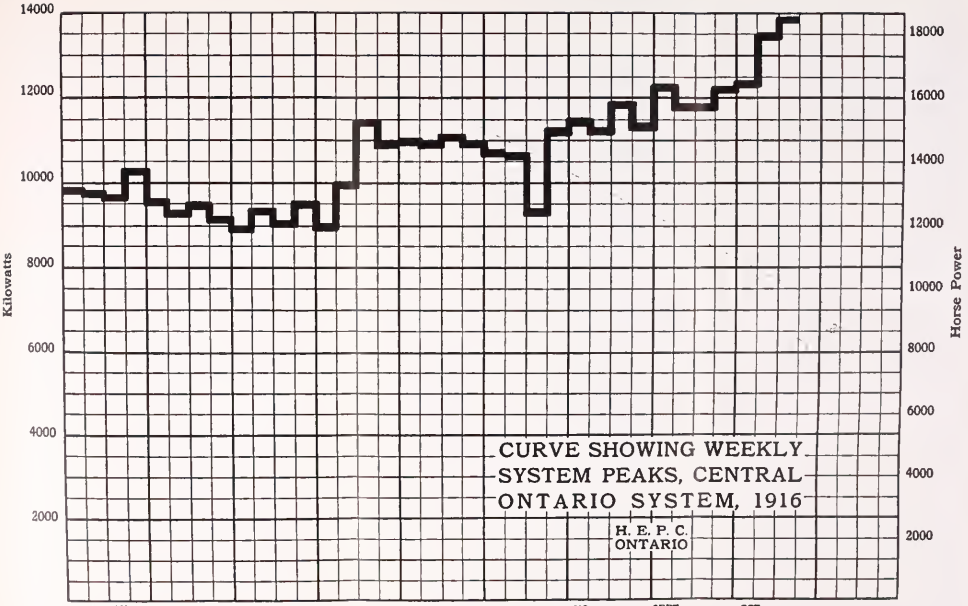
3 98

Kilowatts


14000
12000
10000
8000
6000
4000
2000
Kilowatts
18000
16000
14000
12000
10000
8000
6000
4000
2000
Horse Power
MARCH
APRIL
MAY
JUNE
JULY
AUG.
SEPT.
OCT
CURVE SHOWING WEEKLY
SYSTEM PEAKS, CENTRAL
ONTARIO SYSTEM, 1916
H. E. P. C.
ONTARIO

## PORT ARTHUR SYSTEM

Steady progress was made in the operation of the Port Arthur System during the past year. The increase in load was taken care of by loading the Current River Hydraulic Plant of the City of Port Arthur to its full capacity. Thus the Commission was not obliged to increase the present reserve demand of 2,600 h.p. from the Kaministquia Power Company. The Company's power supply to the Commission during the year was of the usual high standard.

The total demand from both sources is approximately 5,100 horse-power at the present with indications of a very material increase in the near future.

The more uniform routine of operation established in 1915 whereby the load control of the Current River station was placed in the hands of the Commission's operators has proved very economical in every respect.

The Hydro transforming sub-station is in excellent condition, and no failures were reported during the year.

Plans and specifications were prepared and material ordered for the erection of a wood pole line entrance and switching structure, at the transformer station to provide a means of sectionalizing the two 22,000 volt outgoing circuits to the grain elevators and to the waterworks station. This work will be carried out in conjunction with the Port Arthur Commission. Five air break switches will be installed on this structure. The Port Arthur Commission is proceeding with the erection of two air break switches on each of the lines built to the elevators and to the waterworks station. When these installations are completed it will be possible to feed any one of the four elevator stations from either of the two outgoing 22,000 volt lines from the sub-station and will greatly increase the flexibility and security of the service on the high tension portion of the system.

Capital Investments for the Port Arthur System to October 31st, 1916:

| | | |
|---|---|---|
| Transmission Lines | $21,303 12 | |
| Transformer Stations | 86,089 91 | |
| Total Operating Capital | | $107,393 03 |

The Operating and Maintenance Expenses for the fiscal year ending October 1916, are as follows:—

| | | |
|---|---|---|
| Operators' Salaries and Expenses, including Operating supplies, and proportion of Administration and General Office Expenses | $5,721 88 | |
| Interest at 4% per annum | 4,325 00 | |
| Sinking Fund at 1.8% per annum | 1,946 25 | |
| Cost of Power | 37,365 00 | |
| | | $49,358 13 |

A Financial Statement of Operation for the fiscal year ending October 31st, 1916 is given below:—

| | | |
|---|---|---|
| Sum of monthly loads delivered and value, including charges for Administration, General Expenses, Operation, Interest, Sinking Fund and Depreciation | 28,080 h.p. | $54,322 11 |
| Sum of monthly loads purchased and value, including Administration, General Expense, Operation, Interest and Sinking Fund | 28,080 h.p. | 49,358 13 |
| Surplus applicable to Depreciation Reserve | | $4,963 98 |

## THE ST. LAWRENCE SYSTEM

The operation of the Commission's system on the St. Lawrence River for the past year proved very successful. The service received from the hydraulic plant at Iroquois was thoroughly reliable and practically no interruptions occurred. A recent inspection of the Commission's sub-stations and lines shows that so far the depreciation of this system is quite negligible.

The total load demand of the municipalities during the year increased to 1,000 h.p., an amount considerably above the capacity of the generating station at Iroquois. This difficulty was temporarily solved by paralleling the municipal auxiliary steam plant at Brockville with the Commission's power supply purchased at Iroquois.

The transpositions in the transmission line between Morrisburg and Prescott are being rearranged to remove the inductive effect which has interfered with the proper operation of the Bell Telephone Company's line paralleling this line. A series of very interesting tests from an engineering standpoint are being made in connection with this work.

| Municipality. | Load in Oct., 1915. H.P. | Load in Oct., 1916. H.P. | Increase in H.P. |
|---|---|---|---|
| Brockville | 335 | 348.5 | 13.5 |
| Prescott | 205 | 217 | 12 |
| Winchester | 60.3 | 58.9 | ... |
| Chesterville | 40.2 | 48.2 | 8. |
| Williamsburg | 29.5 | 17.4 | ... |

ST. LAWRENCE SYSTEM OPERATING STATEMENT, FISCAL YEAR 1915-16.

| | | |
|---|---|---|
| Capital Investments as at October 31st, 1916: | | |
| St. Lawrence Distributing Stations | $23,063 25 | |
| St. Lawrence Transmission Lines | 147,013 62 | |
| Total Operating Capital | | $170,076 87 |
| **Revenue as per details below** | | |
| Prescott Power Accounts | $4,462 11 | |
| Chesterville " | 1,838 69 | |
| Winchester " | 2,321 42 | |
| Williamsburg " | 563 21 | |
| Brockville " | 8,340 86 | |
| | | 17,526 29 |
| **Expenditures** | | |
| Operators' and Patrolmen's Salaries and Expenses proportion of Administration and General Office Expense | $1,559 66 | |
| Interest on Capital Investment | 6,783 35 | |
| Cost of Power purchased | 5,513 89 | |
| | | 13,856 90 |
| Surplus applicable to Sinking Fund and Depreciation Reserve Accounts | | $3,669 39 |

## TOTAL CAPITAL INVESTMENT TO OCTOBER 31st, 1916

Following is a statement of expenditures on Capital Account, including Niagara, Severn, St. Lawrence, Wasdells, Eugenia, Muskoka, Port Arthur, Renfrew and Ottawa Systems, Stock on Hand, Tools and Equipment, Municipal Construction.

### Niagara System—Transmission Lines

| | | |
|---|---|---|
| Right-of-Way | $1,034,920 58 | |
| Steel Tower Lines | 3,403,585 05 | |
| Telephone Lines | 129,706 69 | |
| Relay System Lines | 54,537 32 | |
| Conduit System (Ont. Power Co. to Niagara Station) | 96,698 64 | |
| | | $4,719,448 28 |
| Right-of-Way (Dundas-Toronto), in course of construction | $6,366 37 | |
| Steel Tower Lines, in course of construction | 8,631 74 | |
| Conduit System, in course of construction | 22,157 54 | |
| Telephone Line (Section A), in course of construction | 1,297 70 | |
| | | 38,453 35 |
| Wood Pole Lines | $1,785,208 01 | |
| Wood Pole Lines, in course of construction | 189,094 42 | |
| | | 1,974,302 43 |
| Welland and St. Catharines District Lines | $16,445 63 | |
| | | 16,445 63 |
| Rural Line Construction | $324,168 44 | |
| | | 324,168 44 |
| Power Development, Right-of-Way and Preliminary Engineering | $33,512 91 | |
| | | 33,512 91 |

### Transformer Stations

| | | |
|---|---|---|
| Stations | $2,797,209 61 | |
| Stations and Extensions to same, in course of construction | 34,415 66 | |
| | | 2,831,625 27 |
| Distributing Stations | $221,130 02 | |
| Distributing Stations, in course of construction | 10,634 26 | |
| | | 231,764 28 |

### Severn System

| | | |
|---|---|---|
| Big Chute Power Development, including Generating and Transformer Stations | $349,787 46 | |
| Transmission Lines | 335,497 20 | |
| Distributing Stations | 78,451 08 | |
| Distributing Stations Extensions in course of construction | 1,409 83 | |
| | | 765,145 57 |

### St. Lawrence System

| | | |
|---|---|---|
| Transmission Lines | $147,228 58 | |
| Distributing Stations | 23,063 25 | |
| Distributing Stations in course of construction | 6,366 07 | |
| | | 176,657 90 |

## Wasdells System

| | | |
|---|---|---|
| Power Development, including Generating and Transformer Station | $136,658 47 | |
| Transmission Lines | 114,406 03 | |
| Distributing Stations | 13,637 00 | |
| | | 264,701 50 |

## Eugenia System

| | | |
|---|---|---|
| Power Development, including Generating and Transformer Station | $638,854 14 | |
| Transmission Lines | 409,355 93 | |
| Distributing Stations | 51,944 33 | |
| Distributing Stations in course of construction | 1,249 29 | |
| Transmission Lines in course of construction | 36,276 66 | |
| Operation | 12,120 44 | |
| | | 1,149,800 79 |

## Muskoka System

| | | |
|---|---|---|
| South Falls Power Development, including Generating and Transformer Station | $78,707 61 | |
| Transmission Line | 52,626 47 | |
| Distributing Station | 8,923 95 | |
| Operation | 912 26 | |
| | | 141,170 29 |

## Port Arthur System

| | | |
|---|---|---|
| Transmission Lines | $21,303 12 | |
| Transformer Station | 86,089 91 | |
| | | 107,393 03 |

## Renfrew System

| | | |
|---|---|---|
| Round Lake Storage Dam | $20,168 86 | |
| Power Development (repayable) | 717 41 | |
| | | 20,886 27 |

## Ottawa System

| | | |
|---|---|---|
| Meter Equipment | $432 39 | |
| | | 432 39 |

## General Accounts (Chargeable)

| | | |
|---|---|---|
| Municipal and Rural Construction Work repayable | $290,247 62 | |
| Sales to Municipalities | 159,226 01 | |
| Renfrew District Operating Charges | 2,519 82 | |
| | | 451,993 45 |

## General Accounts (Capitalized)

| | | |
|---|---|---|
| Office Furniture, Equipment, Stationery, Unexpired Insurance, etc. | $36,531 78 | |
| Office Furniture and Equipment, Electrical Inspection Dept. | 3,863 60 | |
| Toronto Storehouse, Testing Laboratory, Garage and Machine Shop | 117,883 72 | |
| Dundas Storehouse | 1,586 04 | |
| Automobiles and Trucks (Depreciated value) | 27,480 29 | |
| Office Building | 335,866 60 | |
| | | 523,212 03 |

### Stock and Tools

| | | |
|---|---|---|
| Stock on hand for construction purposes and sale to Municipalities | $163,673 72 | |
| Line Maintenance Stock for all Systems | 59,905 07 | |
| Operating Department's Testing and Metering Equipment for all Systems | 2,609 76 | |
| | | 226,188 55 |
| Line and Station Construction Tools and Equipment | $4,000 32 | |
| Line and Station Maintenance Tools | 6,666 08 | |
| Hydraulic Construction Tools | 1,402 88 | |
| | | 12,069 28 |
| Laboratory Operation | $9,482 04 | |
| Machine Shop Operation (Stock) | 520 35 | |
| | | 10,002 39 |
| | | $14,019,374 03 |

## PROVINCIAL EXPENDITURES

### Fiscal Year 1915-16

| | | |
|---|---|---|
| Engineering assistance to non-operating Municipalities for the gathering of data throughout the Province for statistical purposes; reports on Municipal operation | $19,897 74 | |
| Municipal estimates for power supply non-operating Municipalities and also rates investigations | 4,058 45 | |
| Hydrographic surveys, storage surveys, reports and investigations on power sites and stream flow for the Province | 31,366 77 | |
| Reports and statistical data on overhead and underground construction for Municipalities; investigations relative supply of power to rural districts and gathering information with respect to the use of electricity along lines not at present operated by the use of such | 8,625 85 | |
| Engineering investigations, surveys and reports on proposed Municipal Electric Railways | 38,675 66 | |
| Administration and general office expense over all above expenditures | 28,140 55 | |
| | $130,765 02 | |
| *Less*: | | |
| *Credits*:—Various supplies, equipment and capital expenditures charged Province former years, now capitalized in Commission's books, sold, or placed in stock | 38,391 49 | |
| | | $92,373 53 |
| Electrical Inspection—Balance of operating expenses for the year, not including capital investment, such as furniture, typewriters, etc., which is carried forward | | 31,345 53 |
| Special Hydrographic Investigations—Lake-of-the-Woods Districts for the Department of Lands and Mines | | 1,972 02 |
| Equipment on hand purchased for Hydrographic work | | 1,353 28 |
| | | $127,044 36 |

## BALANCE SHEET

OCTOBER 31st, 1916.

### Assets

| | |
|---|---|
| Sundry Expenditures, per list | $14,019,374 03 |
| Warrantable Advances | 35,118 16 |
| Unpaid Power Bills, October 31st, 1916 | 375,579 20 |
| Cash on hand | 297,140 80 |
| | $14,727,212 19 |

### Liabilities

| | |
|---|---|
| Proviucial Treasurer | $13,588,667 72 |
| Niagara System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 939,814 38 |
| Wasdells System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 4,569 18 |
| Severn System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 57,030 56 |
| St. Lawrence System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 4,345 93 |
| Welland System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 1,449 24 |
| Port Arthur System, Surplus applicable to Sinking Fund and Depreciation Reserve Account | 27,151 56 |
| Ottawa, applicable to unpaid Power | 1,204 00 |
| Interest Account | 54,061 38 |
| Cable Reels | 210 85 |
| Central Ontario System Balance | 38,536 29 |
| Storehouse Operation, Surplus | 6,697 03 |
| Garage Operation, Surplus | 533 25 |
| Administrative Office Building, applicable to Sinking Fund | 2,940 82 |
| | $14,727,212 19 |

## MUNICIPAL ACCOUNTS

The results from municipal distribution of Hydro power are shown in the tables submitted in this section. In accordance with the requirements of the Ontario Government the municipal year ends on December 31st. The tables which follow under "Municipal Accounts" cover the calendar year ending December 31st, while all other sections of the annual report deal with the fiscal year ending October 31st.

The work of standardizing the electrical accounts of the Hydro-Electric municipalities, commenced in 1912, has been continued. During the year accounting systems were established in Ailsa Craig, Blenheim, Brockville, Chesley, Chatsworth, Dundalk, Durham, Exeter, Flesherton, Grantham Township, Gravenhurst, Granton, Harriston, Holstein, Listowel, Markdale, Milverton, Mount Forest, Niagara Falls, Orangeville, Otterville, Owen Sound, Palmerston, Petrolia, Ridgetown, Stamford Township, Sarnia and Shelburne, and the local officers instructed in the proper handling of the books.

A periodical inspection has been made of the electrical accounts of all Hydro-Electric municipalities, our accountants assisting the local officers by suggesting improved methods of office routine, and in the case of smaller towns and villages, where the utility is in charge of men of little bookkeeping experience, actually doing most of the accounting.

The system of monthly balance sheets and operating reports enables the Provincial Commission to keep in close touch with local conditions, and from the reports and other data collected and worked up by the auditors, the capital expenditure and operating expenses are periodically divided into the principal revenue accounts, lighting, commercial power, municipal power and street light, these in turn being set against the respective revenues for the purpose of rate adjustment.

This data enables this Commission to authorize and enforce a schedule of selling rates in each municipality which makes each of the above-named revenue departments self-supporting, so that an excessively high rate in one does not take care of a deficit in another.

The seven statistical reports which follow show the result of operation and the present status of the electric utilities in the one hundred and twenty-eight municipalities in which the service has been installed long enough to justify a report.

The municipalities have been listed in the order of their size according to Municipal Bulletin No. 10, Bureau of Industries of the Ontario Department of Agriculture; the populations are shown and the statistics permit an intelligent comparison of operating results in municipalities where conditions are similar. This is resulting in a friendly rivalry between the municipalities for an increased load, an efficient and economical administration, and an intelligent effort to improve the load factor, which is so essential to low selling rates.

Statement "A" is a comparative condensed balance sheet of each municipality as at December 31st, 1915, and December 31st, 1916, showing the plant cost in logical subdivisions, and other items making up the total assets. The true or quick liabilities, such as debenture balance, bank overdraft and accounts payable, are totalled separately before including such reserve accounts as debentures paid, sinking fund reserve, depreciation reserve and surplus. In this way

the relative increase in plant value and net debt during the year in any municipality can be quickly determined.

The percentage of net debt to plant cost at the end of each year has been worked out, and shows a marked decrease. Special attention is called to this very interesting and gratifying feature.

All of the accounts appearing in the balance sheet under "Reserves," such as "Debentures Paid," "Sinking Fund Reserve," "Depreciation Reserve," and "Surplus," might properly be called surplus and represent the gross profit from operation.

While a proper depreciation charge has been included in the operating expenses from the beginning, the plant extensions resulting from the growth of the service have in most cases absorbed most of the depreciation funds. A proper accounting has been kept of this, and interest credited the Depreciation Reserve on the funds so used. A characteristic feature of the operation during the past two years has been a steady increase in the cash balances, which in some cases now amount to more than 25 per cent. of the total plant cost, notwithstanding the constant reductions in selling rates. Many commissions have loaned cash to the municipalities, and some have invested largely in Canadian War Loans, an innovation unique in the operation of civic utilities.

Statement "B" is a condensed operating report for the year ending December 31st, 1916, showing the result in each municipality. The population and the number of consumers in each class is also given to facilitate comparisons. In some cases where the power was turned on subsequent to January 1st, the proportion of the annual fixed charges corresponding to the period of operation has been used, and in other municipalities where the operation covers a very short period, and no actual payment has been made, the fixed charges have been omitted entirely to simplify the accounting in future years and avoid the necessity for annual adjustments.

The cost of the service, which is the basis on which service is billed to the consumers includes every possible loading, i.e., cost of power, operation, maintenance, administration, interest and sinking fund payments on debenture debt, and in addition the sinking fund equivalent of a 5 per cent. straight line depreciation charge. No utility is considered to be on a satisfactory basis until the revenue is sufficient to meet this burden. The rate of depreciation, however, is subject to modification to meet unusual conditions such as large investments for land or perpetual water rights—concrete construction, unusual types of overhead or underground construction or short term debentures.

A study of Statement "B" will show that of the 128 municipalities reported, the revenue in 111 was sufficient to take care of all operating and fixed charges and depreciation, in 11 others all charges except full depreciation were met, and in six only was there an actual loss, due to local conditions, which will correct themselves. The net credit balance of surplus from the year's operation in 128 municipalities, amounted to $357,393.72, and the systems are now serving 148,732 customers, and a population of approximately 1,155,000.

Statement "C" shows in detail the comparative revenue and expenses in each municipality for the past four years. This shows graphically the increase in business year by year and the gradual decrease in the proportion of revenue contributed by the municipal utilities. In comparing the cost of power purchased, the varying price paid per horse-power must be taken into consideration. This schedule will be found in Statement "F."

Statement "D" shows for each municipality for each year of operation, the number of consumers served with light and power, the average monthly kw. hr. consumption, the average net cost per kw. hr., and the average net monthly bill. This is a tabulation of data never before attempted, so far as can be determined, and while built up on information not originally obtained for this purpose, and subject to errors, the averages are substantially correct and show the constantly increasing monthly consumption and decreasing net cost per kw. hr. and average monthly bill, and reflects the satisfactory nature of the service from the standpoint of the consumer.

Statement "E" shows the approximate installation and annual cost per lamp of the street lighting service in cities, towns and villages where Hydro service has been installed. An interesting feature is the annual cost per capita based on the total populations.

Statements "F" and "G" show comparatively the cost of power to the municipalities, the selling rates for power and light in 1912, 1913, 1914, 1915 and 1916 and the recommended rates for 1917.

In order that the effect of the Hydro co-operative scheme on the Hydro municipalities as a whole may be clearly shown, the operation for the past five years of all municipalities has been consolidated into one report, likewise the balance sheets for four years. These consolidated reports show the sound financial condition of the enterprise from the municipal standpoint and meet every criticism against municipal ownership and operation of electric utilities as carried on under the control of the Commission. Particular attention is called to the steady decrease in the percentage which the net debt balance bears to the total assets each year.

## CONSOLIDATED OPERATING REPORTS

| — | 1912 | 1913 | 1914 | 1915 | 1916 |
|---|---|---|---|---|---|
| Number of Municipalities included | 28 | 45 | 69 | 99 | 128 |
| EARNINGS | | | | | |
| Domestic Light | | $ 572,154 38 | $ 789,130 81 | $ 944,271 08 | $ 1,172,878 96 |
| Commercial Light | | 525,438 16 | 673,803 92 | 720,209 26 | 812,130 78 |
| Power | | 905,378 17 | 1,214,829 31 | 1,501,797 78 | 1,921,152 31 |
| Street Light | | 560,925 56 | 698,409 71 | 835,970 87 | 930,057 48 |
| Miscellaneous | | 53,543 24 | 57,482 41 | 68,046 29 | 147,381 50 |
| Total | $ 1,617,674 00 | $ 2,617,439 51 | $ 3,433,656 16 | $ 4,070,295 28 | $ 4,983,601 03 |
| EXPENSES | | | | | |
| Power Purchased | | $ 789,632 87 | $ 1,045,752 65 | $ 1,485,614 73 | $ 1,959,446 83 |
| Sub-Stn. Operation | | 78,394 81 | 97,658 90 | 107,607 31 | 153,761 08 |
| " " Maintenance | | 18,698 46 | 31,790 99 | 25,935 56 | 46,131 53 |
| Dist. System, Operation and Maintenance | | 104,114 51 | 130,998 65 | 154,409 71 | 154,247 17 |
| Line Transformer Maintenance | | 8,547 61 | 11,764 32 | 11,508 92 | 14,528 17 |
| Meter | | 5,222 19 | 9,536 07 | 12,899 14 | 24,218 48 |
| Consumers' Premises—Expenses | | 53,108 38 | 65,192 23 | 47,494 26 | 52,602 01 |
| Street Light System, Operation and Maintenance | | 84,903 76 | 113,047 80 | 136,983 38 | 145,471 50 |
| Promotion of Business | | 72,303 51 | 86,683 02 | 74,402 55 | 79,324 85 |
| Billing and Collecting | | 77,351 76 | 103,560 71 | 131,541 27 | 154,508 58 |
| General Office, Salary and Expenses | | 154,932 69 | 230,899 75 | 236,777 86 | 306,709 35 |
| Undistributed Expenses | | 64,538 69 | 81,261 28 | 94,978 89 | 88,646 53 |
| Interest and Debenture Payments | | 528,549 21 | 662,092 34 | 817,978 89 | 951,781 99 |
| Miscellaneous Expenses | | 884 95 | 8,089 63 | 34,230 26 | 8,687 44 |
| Total Expenses | $ 1,377,168 00 | $ 2,041,183 40 | $ 2,678,328 34 | $ 3,371,414 00 | $ 4,140,065 51 |
| Surplus | $ 240,506 00 | $ 576,256 11 | $ 755,327 82 | $ 698,881 28 | $ 843,535 52 |
| Depreciation Charge | $ 124,992 47 | $ 262,675 24 | $ 357,883 31 | $ 414,506 99 | $ 486,141 80 |
| Surplus Less Depreciation Charge | $ 115,513 53 | $ 313,580 87 | $ 397,444 51 | $ 284,374 29 | $ 357,393 72 |

Note.—Details of 1912 Revenue and Expenses not now available.

## CONSOLIDATED BALANCE SHEETS

| Year ending December 31st | 1913 | 1914 | 1915 | 1916 |
|---|---|---|---|---|
| Number of Municipalities included | 45 | 69 | 99 | 128 |
| ASSETS—Lands and Buildings | $ 626,707 34 | $ 791,732 20 | $ 873,838 18 | $ 1,335,936 33 |
| Sub-Station Equipment | 1,090,875 69 | 1,476,087 84 | 1,582,062 56 | 1,934,626 12 |
| Distribution System, Overhead | 2,690,834 74 | 3,422,763 93 | 4,234,626 05 | 4,832,353 27 |
| " " Underground | 644,514 24 | 807,153 53 | 928,420 77 | 1,095,709 62 |
| Line Transformers | 615,546 20 | 787,613 52 | 981,754 70 | 1,179,132 07 |
| Meters | 840,606 64 | 1,172,475 11 | 1,418,165 08 | 1,711,299 49 |
| Street Lighting Equipment, Regular | 900,614 80 | 1,071,255 37 | 1,309,628 49 | 1,251,057 13 |
| " " " Ornamental | 62,765 34 | 270,386 55 | 197,644 82 | 306,388 95 |
| Miscellaneous Equipment and Const. Exp. | 866,551 89 | 2,062,035 90 | 1,701,182 66 | 2,059,263 42 |
| Steam or Hydraulic Plant | 1,401,175 28 | 420,108 33 | 461,651 60 | 864,500 01 |
| Old Plant | 341,277 00 | 478,881 56 | 415,518 23 | 689,272 67 |
| Other Miscellaneous Assets | ..... | 140,631 56 | 768,854 63 | 70,475 99 |
| Total Plant | $10,081,469 16 | $12,901,125 40 | $14,873,347 77 | $17,330,015 07 |
| Bank and Cash Balance | $ 450,887 97 | $ 422,350 12 | $ 284,653 96 | $ 1,061,029 90 |
| Inventories | 344,487 95 | 561,873 08 | 602,920 69 | 695,152 23 |
| Accounts Receivable | 540,274 58 | 615,226 76 | 726,556 76 | 764,504 59 |
| Sinking Fund | 431,747 27 | 625,217 03 | 868,983 78 | 1,166,017 73 |
| Other Assets | 58,959 93 | 123,410 97 | 326,801 11 | 342,215 87 |
| Total Assets | $11,907,826 86 | $15,249,203 36 | $17,683,264 07 | $21,358,935 39 |
| LIABILITIES—Debenture Balance | $ 8,711,308 37 | $10,678,078 36 | $11,831,811 03 | $15,058,641 57 |
| Accounts Payable | 1,553,711 45 | 1,682,150 29 | 2,040,038 01 | 969,187 75 |
| Bank Overdraft | 160,919 16 | 228,622 50 | 292,106 44 | 178,413 26 |
| Other Liabilities | 42,412 81 | 113,838 66 | 37,388 31 | 491,874 90 |
| Total Liabilities | $10,468,351 79 | $12,702,689 81 | $14,201,343 79 | $16,698,117 48 |
| RESERVES—Debentures Paid | $ 202,751 26 | $ 320,129 10 | $ 394,466 22 | $ 549,778 59 |
| Sinking Fund Reserve | 431,747 27 | 625,217 03 | 868,983 78 | 1,165,785 94 |
| Depreciation Reserve | 478,145 88 | 850,618 07 | 1,337,739 73 | 1,843,804 68 |
| Surplus | 326,830 66 | 750,549 35 | 880,730 55 | 1,101,448,70 |
| Total Reserves | $ 1,439,475 07 | $ 2,546,513 55 | $ 3,481,920 28 | $ 4,660,817 91 |
| Total Liabilities and Reserves | $11,907,826 86 | $15,249,203 36 | $17,683,264 07 | $21,358,935 39 |
| Percentage of Net Debt to Total Assets | 88.0% | 83.0% | 80.3% | 78.4% |

STATE

## Comparative Condensed Balance Sheets of Electric Departments

| Municipality | Toronto | | Hamilton | |
|---|---|---|---|---|
| Population | 463,705 | | 100,461 | |
| —— | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 373,733 08 | 703,215 79 | 59,020 10 | 72,609 20 |
| Sub-Station Equipment | 729,143 69 | 946,400 28 | 89,694 10 | 89,713 89 |
| Distribution System, Overhead | 1,554,253 98 | 1,703,286 32 | 287,116 34 | 300,134 25 |
| " " Underground | 685,557 44 | 852,317 09 | 156,569 93 | 157,415 41 |
| Line Transformers | 394,525 78 | 394,432 05 | 88,927 58 | 102,299 20 |
| Meters | 564,238 32 | 638,229 41 | 125,792 86 | 146,947 41 |
| Street Light Equipment, Regular | 795,750 64 | 700,908 22 | 92,520 48 | 92,882 82 |
| " " Ornamental | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 1,231,753 03 | 1,528,054 43 | 118,426 02 | 120,189 97 |
| Steam or Hydraulic Plant | e 50,106 14 | e 34,343 18 | ..... | ..... |
| Old Plant | f 505,646 83 | ..... | 2,000 00 | 2,000 00 |
| Total Plant | 6,884,708 93 | 7,501,186 77 | 1,020,067 41 | 1,084,192 15 |
| Bank and Cash Balance | 84,220 22 | 710,141 95 | ..... | ..... |
| Inventories | 440,845 89 | 425,259 74 | 34,450 25 | 32,300 98 |
| Accounts Receivable | 344,828 27 | 241,461 01 | 95,138 39 | 104,485 43 |
| Sinking Fund | 480,949 94 | 590,195 03 | 50,189 06 | 72,887 60 |
| Other Assets | 73,657 99 | 4,122 20 | 3,217 39 | 6,071 12 |
| Total Assets | 8,309,211 24 | 9,472,366 70 | 1,203,062 50 | 1,299,937 28 |
| LIABILITIES AND RESERVES | | | | |
| Liabilities | | | | |
| Debenture Balance | 6,300,000 00 | 7,898,000 00 | 840,000 00 | 840,000 00 |
| Accounts Payable | 848,851 48 | 166,789 53 | 63,298 69 | 75,881 85 |
| Bank Overdraft | ..... | ..... | 110,745 32 | 101,022 98 |
| Other Liabilities | ..... | 17,184 46 | 23,607 37 | 23,944 75 |
| Total Liabilities | 7,148,851 48 | 8,081,973 99 | 1,037,651 38 | 1,040,849 58 |
| Reserves | | | | |
| Debentures Paid | ..... | ..... | ..... | ..... |
| Sinking Fund Reserve | 480,949,94 | 590,195 03 | 50,189 06 | 72,887 60 |
| Depreciation Reserve | ..... | 736,807 23 | 55,893 88 | 92,777 42 |
| Surplus | 679,409 82 | 63,390 45 | 59,328 18 | 93,422 68 |
| Total Liabilities and Reserves | 8,309,211 24 | 9,472,366 70 | 1,203,062 50 | 1,299,937 28 |
| Percentage of Net Debt to Total Assets | 86.0 | 79.2 | 86.3 | 89.0 |

"e" Exhibition construction.
"f" Work orders in progress.

MENT "A"

of Hydro Municipalities as at December 31st, 1915 and 1916

| Ottawa 100,163 | | London 58,055 | | Brantford 25,420 | | Windsor 24,162 | |
|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 83,084 17 | 88,344 15 | 68,220 17 | 70,728 19 | 11,069 21 | 11,753 82 | 11,605 94 | 11,629 09 |
| 102,612 38 | 108,988 09 | 144,439 34 | 168,395 04 | 38,710 52 | 39,521 99 | 30,862 05 | 35,569 56 |
| 318,704 90 | 318,229 86 | 279,633 40 | 329,206 48 | 100,808 23 | 105,373 04 | 112,368 72 | 133,385 25 |
| 77,771 77 | 77,897 39 | 352 43 | 352 43 | ..... | ..... | ..... | ..... |
| 89,194 77 | 92,663 05 | 35,324 59 | 41,516 23 | 18,750 49 | 22,384 67 | 14,516 02 | 15,567 06 |
| 100,689 39 | 109,891 07 | 110,487 46 | 123,342 88 | 18,837 13 | 24,735 95 | 17,839 38 | 34,904 43 |
| 55,895 88 | 57,433 54 | 38,441 58 | 41,191 09 | 15,909 64 | 15,920 77 | 119,163 76 | 121,476 30 |
| 29,957 84 | 29,957 84 | ..... | ..... | 33,053 38 | 31,068 29 | 33,621 09 | 35,404 07 |
| 29,293 13 | 29,847 05 | 47,031 27 | 50,627 34 | 21,357 12 | 23,919 96 | 42,499 88 | 50,445 21 |
| ..... ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | 6,548 02 | ..... |
| 887,204 23 | 913,252 04 | 723,930 24 | 825,359 68 | 257,995 72 | 274,678 49 | 389,024 86 | 438,380 97 |
| 66,323 19 | 51,110 55 | 24,567 86 | 4,072 54 | 1,413 88 | 2,051 95 | 3,858 52 | 3,689 43 |
| 8,274 30 | 22,431 62 | 36,561 72 | 37,841 57 | 552 51 | 1,386 39 | 8,019 99 | 14,747 32 |
| 16,320 77 | 17,658 60 | 47,573 16 | 78,958 90 | 1,252 91 | 3,553 21 | 720 96 | 3,164 66 |
| 99,389 59 | 114,201 16 | 30,900 36 | 42,681 40 | 10,229 50 | 17,859 68 | 2,791 18 | 5,666 09 |
| ..... | 1,186 12 | 210,000 00 | 185,000 00 | ..... | ..... | ..... | 88 77 |
| 1,077,512 08 | 1,119,840 09 | 1,073,533 34 | 1,173,914 09 | 271,444 52 | 299,529 72 | 404,415 51 | 465,737 24 |
| 700,000 00 | 700,000 00 | 661,010 13 | 706,897 55 | 222,500 00 | 237,500 00 | 343,477 40 | 219,928 72 |
| 12,665 18 | 4,713 68 | 168,450 68 | 139,342 16 | ..... | 3,544 29 | 50,664 05 | 10,000 00 |
| ..... | ..... | ..... | ..... | 16,452 58 | ..... | ..... | ..... |
| ..... | ..... | 1,571 00 | 2,086 50 | ..... | 2,276 50 | 375 00 | 213,884 09 |
| 712,665 18 | 704,713 68 | 831,031 81 | 848,326 21 | 238,952 58 | 243,320 79 | 394,516 45 | 443,812 81 |
| ..... | ..... | 30,889 87 | 35,002 45 | ..... | ..... | 1,783 01 | 5,071 31 |
| 99,389 59 | 114,201 16 | 30,900 36 | 42,681 40 | 10,229 50 | 17,859 68 | 2,791 18 | 5,666 09 |
| 222,378 30 | 254,553 30 | 98,604 15 | 124,396 06 | 15,408 22 | 22,908 22 | ..... | 5,157 50 |
| 43,079 01 | 46,371 95 | 82,107 15 | 123,507 97 | 6,854 22 | 15,441 03 | 5,324 87 | 6,029 53 |
| 1,077,512 08 | 1,119,840 09 | 1,073,533 34 | 1,173,914 09 | 271,444 52 | 299,529 72 | 404,415 51 | 465,737 24 |
| 66.1 | 62.9 | 77.3 | 72.3 | 88.1 | 81.3 | 97.5 | 94.1 |

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments.

| Municipality | Peterborough | | Kitchener | |
|---|---|---|---|---|
| Population | 20,426 | | 19,266 | |
| —— | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 15,198 33 | 8,248 17 | 31,068 71 | 31,423 12 |
| Sub-Station Equipment | ..... | 12,824 50 | 72,450 20 | 70,216 45 |
| Distribution System, Overhead | 1,354 73 | 70,605 90 | 84,877 71 | 94,801 23 |
| " " Underground | ..... | ..... | 6,785 40 | 6,864 35 |
| Line Transformers | 3,051 94 | 28,622 94 | 29,079 41 | 34,074 57 |
| Meters | 12,365 76 | 32,876 43 | 38,768 09 | 45,067 49 |
| Street Light Equipment, Regular | 32 72 | 5,334 91 | 20,242 17 | 20,521 23 |
| " " Ornamental | ..... | 26,107 68 | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 5,266 12 | 32,251 12 | 6,016 95 | 6,834 96 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... |
| Old Plant | 136,050 95 | 11,789 42 | 56,879 74 | 55,952 40 |
| Total Plant | 173,320 55 | 228,661 07 | 346,168 38 | 365,755 80 |
| Bank and Cash Balance | ..... | 850 26 | 11,617 59 | 8,583 96 |
| Inventories | ..... | 2,898 98 | 6,371 06 | 5,960 22 |
| Accounts Receivable | 5,810 98 | 5,692 47 | 17,613 09 | 8,106 14 |
| Sinking Fund | 4,364 80 | 7,795 08 | ..... | ..... |
| Other Assets | ..... | ..... | ..... | 17,730 42 |
| Total Assets | 183,496 33 | 245,897 86 | 381,770 12 | 406,136 54 |
| LIABILITIES AND RESERVES | | | | |
| Liabilities | | | | |
| Debenture Balance | 120,000 00 | 120,000 00 | 243,675 27 | 236,220 14 |
| Accounts Payable | 27,302 24 | 78,619 25 | 10,125 09 | 11,343 22 |
| Bank Overdraft | 10,665 48 | ..... | ..... | ..... |
| Other Liabilities | 5,500 00 | 8,487 96 | ..... | ..... |
| Total Liabilities | 163,467 72 | 207,107 21 | 253,800 36 | 247,563 36 |
| Reserves | | | | |
| Debentures Paid | ..... | ..... | 56,474 73 | 63,929 86 |
| Sinking Fund Reserve | 4,364 80 | 7,795 08 | ..... | ..... |
| Depreciation Reserve | 7,500 00 | 13,750 00 | 34,803 24 | 49,441 49 |
| Surplus | 8,163 81 | 17,245 57 | 36,691 79 | 45,201 83 |
| Total Liabilities and Reserves | 183,496 33 | 245,897 86 | 381,770 12 | 406,136 54 |
| Percentage of Net Debt to Total Assets | 90.0 | 84.2 | 66.5 | 60.9 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| St. Catharines 17,880 | | St. Thomas 17,174 | | Stratford 17,081 | | Guelph 16,735 | |
|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 1,492 42 | 1,492 42 | 12,351 59 | 29,463 54 | 23,597 29 | 23,977 25 | 19,400 41 | 19,547 56 |
| 5,276 84 | 11,407 86 | 35,337 54 | 41,382 42 | 21,409 13 | 21,180 71 | 40,571 05 | 59,022 65 |
| 68,349 25 | 99,137 55 | 67,507 25 | 69,620 45 | 85,523 21 | 90,347 88 | 56,657 84 | 48,565 40 |
| 1,383 80 | ..... | ..... | 862 95 | ..... | ..... | ..... | ..... |
| 9,245 24 | 26,101 39 | 13,373 59 | 13,984 50 | 14,726 43 | 15,357 80 | 9,966 00 | 12,687 97 |
| 11,031 05 | 22,828 57 | 24,058 50 | 27,151 73 | 23,722 21 | 27,791 74 | 22,836 82 | 31,279 81 |
| 6,501 94 | 7,625 55 | 12,030 48 | 12,234 32 | 5,971 43 | 5,980 95 | 25,553 60 | 25,350 34 |
| ..... | ..... | 6,749 83 | 6,767 16 | 22,175 22 | 22,725 24 | ..... | ..... |
| 19,896 25 | 22,773 94 | 6,423 66 | 7,023 16 | 7,848 12 | 7,848 12 | 6,777 76 | 6,919 76 |
| ..... | ..... | ..... | ..... | ..... | ..... | a36,301 89 | a36,132 81 |
| 75,554 13 | 41,351 25 | 4,289 96 | 2,795 84 | 11,187 00 | 10,927 00 | ..... | ..... |
| 198,730 92 | 232,718 53 | 182,122 40 | 211,286 07 | 216,160 04 | 226,136 69 | 218,065 37 | 239,506 30 |
| 25 00 | 10,513 39 | 22,597 51 | 32,627 98 | 408 17 | 8,244 03 | 17,752 16 | 11,793 31 |
| 986 60 | 1,840 26 | 1,879 27 | 3,275 27 | 2,759 65 | 2,199 76 | 12,374 40 | 17,559 32 |
| 2,821 50 | 2,752 90 | 10,960 39 | 9,086 15 | 13,178 01 | 479 93 | 7,646 42 | 7,655 01 |
| 4,219 31 | 6,667 03 | ..... | ..... | 13,553 36 | 17,751 59 | 15,741 28 | 18,619 72 |
| ..... | ..... | 86 25 | 138 57 | 3,243 74 | ..... | ..... | ..... |
| 206,783 34 | 254,492 11 | 217,645 82 | 256,414 04 | 249,302 97 | 254,812 00 | 271,579 63 | 295,133 66 |
| 116,000 00 | 207,022 83 | 109,146 67 | 120,810 52 | 161,710 00 | 142,000 00 | 125,355 51 | 123,201 16 |
| 74,239 94 | 8,964 32 | 8,888 40 | 9,398 24 | 20,255 48 | 33,091 41 | 5,868 23 | 7,437 01 |
| 1,288 82 | ..... | ..... | ..... | 7,319 21 | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 191,528 76 | 215,987 15 | 118,035 07 | 130,208 76 | 189,284 69 | 175,091 41 | 131,223 74 | 130,638 17 |
| ..... | ..... | 23,937 76 | 27,273 91 | 24,090 00 | 28,470 00 | 19,644 48 | 21,798 83 |
| 4,219 31 | 6,667 03 | ..... | ..... | 13,553 36 | 17,751 59 | 15,741 28 | 18,619 72 |
| 8,100 00 | 18,600 00 | 56,662 04 | 66,462 04 | 22,374 92 | 29,874 92 | 58,546 12 | 69,279 03 |
| 2,935 27 | 13,237 93 | 19,010 95 | 32,469 33 | ..... | 3,624 08 | 46,424 01 | 54,797 91 |
| 206,783 34 | 254,492 11 | 217,645 82 | 256,414 04 | 249,302 97 | 254,812 00 | 271,579 64 | 295,133 66 |
| 92.6 | 84.8 | 54.2 | 50.7 | 75.9 | 69.1 | 48.3 | 44.2 |

"a" Motors rented to consumers.

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality | Port Arthur | | Chatham | |
|---|---|---|---|---|
| Population | 14,307 | | 12,863 | |
| —— | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | ..... | ..... | 18,320 18 | 22,144 44 |
| Sub-Station Equipment | 1,056 49 | ..... | 6,055 12 | 13,856 63 |
| Distribution System, Overhead | 201,080 80 | ..... | 45,955 34 | 50,362 48 |
| " " Underground | ..... | ..... | ..... | ..... |
| Line Transformers | 10,848 93 | a | 9,810 16 | 12,727 18 |
| Meters | 42,714 41 | ..... | 9,522 19 | 15,561 50 |
| Street Light Equipment, Regular | 27,000 00 | ..... | 6,282 21 | 7,517 98 |
| " " Ornamental | ..... | ..... | 20,208 57 | 26,907 19 |
| Miscel. Equip. and Construct'n Exp. | 8,803 41 | ..... | 13,627 39 | 14,154 87 |
| Steam or Hydraulic Plant | 378,798 55 | 675,641 74 | ..... | ..... |
| Old Plant | ..... | ..... | ..... | ..... |
| Total Plant | 670,302 59 | 675,641 74 | 129,781 16 | 163,232 27 |
| Bank and Cash Balance | 13,363 06 | 6,834 64 | 691 84 | 25 00 |
| Inventories | 240 22 | 12,194 06 | 7,307 45 | 21,712 28 |
| Accounts Receivable | 26,178 99 | 98,690 26 | 1,308 20 | 3,797 92 |
| Sinking Fund | 68,476 51 | 81,537 46 | ..... | ..... |
| Other Assets | 164 62 | 9,765 00 | *b 721 47* | *b 119 81* |
| Total Assets | 778,726 01 | 884,663 16 | 139,810 12 | 188,887 28 |
| LIABILITIES AND RESERVES | | | | |
| Liabilities | | | | |
| Debenture Balance | 568,758 70 | 559,403 71 | 88,861 60 | 87,654 90 |
| Accounts Payable | ..... | 34,170 24 | 26,147 08 | 62,712 49 |
| Bank Overdraft | ..... | ..... | 22,853 04 | 7,137 59 |
| Other Liabilities | 10,031 67 | 70,412 25 | 810 00 | 29,037 20 |
| Total Liabilities | 578,790 37 | 663,986 20 | 138,671 72 | 186,542 18 |
| Reserves | | | | |
| Debentures Paid | 58,823 83 | 66,696 29 | 1,138 40 | 2,345 10 |
| Sinking Fund Reserve | 68,476 51 | 81,537 46 | ..... | ..... |
| Depreciation Reserve | ..... | 12,283 82 | ..... | ..... |
| Surplus | 72,635 30 | 60,159 39 | ..... | ..... |
| Total Liabilities and Reserves. | 778,726 01 | 884,663 16 | 139,810 12 | 188,887 28 |
| Percent'ge of Net Debt to Total Assets | ..... | ..... | ..... | 98.8 |

"a" All plant included in total.
"b" Operating losses shown in italics.

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Owen Sound | Galt | | Sarnia | Niagara Falls | Brockville |
|---|---|---|---|---|---|
| 11,910 | 11,852 | | 11,676 | 11,147 | 9,428 |
| 1916 | 1915 | 1916 | 1916 | 1916 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 24,446 80 | 12,201 05 | 12,286 30 | 96 06 | 14,183 10 | 27,079 01 |
| 9,626 38 | 22,082 47 | 26,104 06 | 5,900 11 | 22,165 31 | ..... |
| 46,266 12 | 105,277 47 | 115,954 39 | 33,562 61 | 51,385 71 | 37,671 14 |
| ..... | ..... | ..... | ..... | ..... | ..... |
| 11,001 65 | 17,795 56 | 19,488 11 | 10,253 97 | 28,952 40 | 10,258 61 |
| 20,853 60 | 28,938 43 | 31,975 55 | 1,446 43 | 30,107 74 | 12,778 36 |
| 6,788 66 | 8,484 27 | 8,501 57 | 2,281 53 | 9,542 43 | 11,448 52 |
| 500 00 | 50,697 06 | 50,703 11 | 410 06 | 16,000 00 | ..... |
| 1,202 04 | 11,192 06 | 12,104 91 | 557 39 | 1,943 49 | 3,763 23 |
| 33,282 00 | ..... | ..... | 169,063 55 | ..... | 51,948 00 |
| ..... | ..... | ..... | ..... | 7,772 00 | ..... |
| 153,967 25 | 256,668 37 | 277,118 00 | 223,571 71 | 182,052 18 | 154,946 87 |
| 16,883 65 | ..... | ..... | 45,784 84 | 50 00 | 200 00 |
| 4,845 02 | 1,591 89 | 3,138 81 | 31 29 | ..... | 3,484 08 |
| 2,062 43 | ..... | ..... | ..... | 7,386 00 | 34,707 55 |
| 58,733 81 | 20,459 43 | 26,666 56 | ..... | ..... | 20,778 13 |
| 139 40 | ..... | ..... | ..... | 973 41 | 1,367 94 |
| 236,631 56 | 278,719 69 | 306,923 37 | 269,387 84 | 190,461 59 | 215,484 57 |
| 141,000 00 | 165,999 55 | 178,902 34 | 244,737 85 | 98,809 07 | 153,375 35 |
| 4,830 18 | ..... | ..... | 10,462 15 | 1,522 41 | 1,672 48 |
| ..... | 39,483 55 | 40,001 97 | ..... | 9,704 36 | 11,024 49 |
| ..... | ..... | ..... | ..... | 923 17 | ..... |
| 145,830 18 | 205,483 10 | 218,904 31 | 255,200 00 | 110,959 01 | 166,072 32 |
| ..... | ..... | ..... | 3,262 15 | 43,948 93 | 3,977 99 |
| 58,733 81 | 20,459 43 | 26,666 56 | ..... | ..... | 20,778 13 |
| 3,307 80 | 35,500 00 | 44,000 00 | ..... | 7,945 00 | 7,000 00 |
| 28,759 77 | 17,277 16 | 17,352 50 | 10,925 69 | 27,608 65 | 17,656 13 |
| 236,631 56 | 278,719 69 | 306,923 37 | 269,387 84 | 190,461 59 | 215,484 57 |
| 61.6 | 73.7 | 71.3 | 94.6 | 58.2 | 77.2 |

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

| Municipality<br>Population | Woodstock<br>10,084 | | Welland<br>7,243 | |
|---|---|---|---|---|
| —— | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 7,331 95 | 7,331 95 | 6,503 78 | 6,550 39 |
| Sub-Station Equipment | 27,685 13 | 27,685 13 | 15,846 88 | 16,185 58 |
| Distribution System, Overhead | 36,335 71 | 38,264 67 | 43,624 07 | 47,636 88 |
| " " Underground | ..... | ..... | ..... | ..... |
| Line Transformers | 20,173 06 | 20,635 31 | 11,743 46 | 12,605 44 |
| Meters | 16,994 24 | 18,492 45 | 8,549 11 | 8,755 87 |
| Street Light Equipment, Regular | 10,328 77 | 10,450 67 | 2,269 59 | 2,305 19 |
| " " Ornamental | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | ..... | ..... | 7,348 74 | 7,348 74 |
| Steam or Hydraulic Plant | 15,743 62 | 15,835 26 | ..... | ..... |
| Old Plant | 15,835 26 | 15,743 62 | ..... | ..... |
| Total Plant | 150,427 74 | 154,439 06 | 95,885 63 | 101,388 09 |
| Bank and Cash Balance | 13,953 07 | 1,796 60 | 1,803 40 | 3,630 67 |
| Inventories | 113 12 | 525 33 | ..... | 2,753 28 |
| Accounts Receivable | ..... | ..... | 16,936 34 | 33,899 06 |
| Sinking Fund | 36,347 74 | 40,296 29 | 3,566 00 | 5,170 70 |
| Other Assets | 1,500 00 | 23,000 00 | ..... | ..... |
| Total Assets | 202,341 17 | 220,057 28 | 118,191 37 | 146,841 80 |
| LIABILITIES AND RESERVES | | | | |
| Liabilities | | | | |
| Debenture Balance | 107,385 63 | 107,385 63 | 90,000 00 | 90,000 00 |
| Accounts Payable | ..... | ..... | 16,322 18 | 32,852 15 |
| Bank Overdraft | ..... | ..... | ..... | ..... |
| Other Liabilities | ..... | ..... | ..... | ..... |
| Total Liabilities | 107,385 63 | 107,385 63 | 106,322 18 | 122,852 15 |
| Reserves | | | | |
| Debentures Paid | ..... | ..... | ..... | ..... |
| Sinking Fund Reserve | 36,347 24 | 40,296 29 | 3,566 00 | 5,170 70 |
| Depreciation Reserve | 22,483 98 | 29,414 18 | 4,425 00 | 8,425 00 |
| Surplus | 36,124 32 | 42,961 18 | 3,878 19 | 10,393 95 |
| Total Liabilities and Reserves | 202,341 17 | 220,057 28 | 118,191 37 | 146,841 80 |
| Percentage of Net Debt to Total Assets | 53.1 | 48.8 | 90.0 | 83.7 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Barrie 6,453 | | Collingwood 6,361 | | Midland 6,258 | | Ingersoll 5,176 | |
|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 12,034 61 | 12,034 61 | 4,343 60 | 4,343 60 | 4,780,69 | 4,780 69 | 3,057 57 | 3,057 57 |
| 20,540 44 | 4,553 77 | 4,352 80 | 4,368 39 | 8,407 78 | 8,407 78 | 10,232 56 | 10,302 31 |
| 19,824 30 | 21,641 41 | 25,104 34 | 26,364 70 | 31,627 90 | 34,013 89 | 31,051 22 | 31,785 67 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3,617 24 | 4,646 63 | 5,219 75 | 6,740 60 | 8,640 06 | 10,759 05 | 7,898 75 | 8,025 25 |
| 15,208 25 | 15,487 93 | 9,648 56 | 11,098 00 | 11,236 62 | 12,188 33 | 10,542 34 | 11,538 95 |
| 3,789 52 | 3,357 02 | 2,446 35 | 2,446 35 | 3,421 85 | 3,860 32 | 2,336 01 | 2,336 01 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4,597 59 |
| 757 49 | 757 49 | 5,069 51 | 5,208 02 | 3,500 58 | 3,500 58 | 8,253 30 | 8,631 30 |
| 31,062 48 | 46,491 57 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 4,415 17 | 3,519 17 | 7,057 84 | 7,057 84 | 22,334 21 | 22,334 21 |
| 106,834 33 | 108,970 43 | 60,600 08 | 64,088 83 | 78,673 32 | 84,568 48 | 95,705 96 | 102,608 86 |
| 2,923 18 | 9,125 32 | 2,643 45 | 9,575 32 | 10,455 21 | 12,833 55 | ..... | 4,008 65 |
| 5,257 50 | 5,850 42 | 175 13 | 45 30 | 311 87 | 902 25 | 404 29 | 1,093 84 |
| 5,072 17 | 4,835 56 | 7,412 52 | 7,369 37 | 4,373 10 | ..... | 7,757 02 | 6,326 75 |
| ..... | ..... | ..... | ..... | ..... | ..... | 8,388 82 | 10,304 50 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 120,087 18 | 128,781 73 | 70,831 18 | 81,078 82 | 93,813 50 | 98,304 28 | 112,256 09 | 124,342 60 |
| 48,437 13 | 44,547 24 | 33,295 21 | 31,171 45 | 38,562 52 | 36,304 07 | 79,800 00 | 79,800 00 |
| 1,434 21 | 1,659 72 | 2,689 50 | 3,404 50 | 800 00 | 1,300 00 | 1,824 74 | 1,837 50 |
| ..... | ..... | ..... | ..... | ..... | ..... | 2,130 08 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4,597 59 |
| 49,871 34 | 46,206 96 | 35,984 71 | 34,575 95 | 39,362 52 | 37,604 07 | 83,754 82 | 86,235 09 |
| 38,562 87 | 42,452 76 | 6,115 08 | 8,238 84 | 15,187 48 | 17,445 93 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | 8,388 82 | 10,304 50 |
| 10,350 00 | 12,925 00 | 7,390 00 | 9,540 00 | 12,400 00 | 15,500 00 | 9,230 00 | 11,880 00 |
| 21,302 97 | 27,197 01 | 21,341 39 | 28,724 03 | 26,863 50 | 27,754 28 | 10,882 45 | 15,923 01 |
| 120,087 18 | 128,781 73 | 70,831 18 | 81,078 82 | 93,813 50 | 98,304 28 | 112,256 09 | 124,342 60 |
| 41.5 | 35.9 | 50.5 | 42.6 | 42.0 | 38.2 | 76.8 | 69.4 |

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality | Walkerville | | Waterloo | |
|---|---|---|---|---|
| Population | 5,096 | | 4,956 | |
| —— | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 16,837 66 | 16,917 78 | 4,740 85 | 5,142 20 |
| Sub-Station Equipment | 18,154 62 | 19,133 82 | 18,146 58 | 19,502 40 |
| Distribution System, Overhead | 17,078 32 | 18,979 67 | 35,280 24 | 36,959 55 |
| " " Underground | ..... | ..... | ..... | ..... |
| Line Transformers | 14,002 76 | 14,182 87 | 8,992 44 | 9,240 38 |
| Meters | 15,990 97 | 14,891 76 | 9,566 70 | 10,823 75 |
| Street Light Equipment, Regular | d | 45,876 33 | 5,191 76 | 5,229 63 |
| " " Ornamental | d | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 15,403 42 | 16,272 91 | 1,266 56 | 2,933 16 |
| Steam or Hydraulic Plant | ..... | 18,556 21 | 2,483 64 | 2,483 64 |
| Old Plant | 39,753 34 | 18,509 77 | 9,666 15 | 9,666 15 |
| Total Plant | 137,221 09 | 183,321 12 | 95,334 92 | 101,980 86 |
| Bank and Cash Balance | 590 60 | 50 00 | 37 27 | ..... |
| Inventories | ..... | 10,418 98 | 1,559 42 | 2,583 41 |
| Accounts Receivable | 7,717 87 | 14,880 78 | 5,206 24 | 3,401 83 |
| Sinking Fund | ..... | ..... | 1,728 00 | 2,016 00 |
| Other Assets | ..... | ..... | ..... | 2,137 05 |
| Total Assets | 145,529 56 | 208,670 88 | 103,865 85 | 112,119 15 |
| LIABILITIES AND RESERVES | | | | |
| Liabilities | | | | |
| Debenture Balance | 93,156 89 | 90,907 37 | 62,915 67 | 61,838 48 |
| Accounts Payable | 43,362 27 | 39,029 53 | 1,440 00 | 1,656 29 |
| Bank Overdraft | ..... | 4,639 37 | ..... | 2,144 89 |
| Other Liabilities | 266 78 | m 50,639 41 | ..... | ..... |
| Total Liabilities | 136,785 94 | 185,215 68 | 64,355 67 | 65,639 66 |
| Reserves | | | | |
| Debentures Paid | 3,102 11 | 5,351 63 | 3,084 33 | 4,161 52 |
| Sinking Fund Reserve | ..... | ..... | 1,728 00 | 2,016,00 |
| Depreciation Reserve | ..... | 3,773 06 | 15,450 00 | 19,150,00 |
| Surplus | 5,641 51 | 14,330 51 | 19,247 85 | 21,151,97 |
| Total Liabilities and Reserves | 145,529 56 | 208,670 88 | 103,865 85 | 112,119 15 |
| Percentage of Net Debt to Total Assets | 94.0 | 88.8 | 63.5 | 58.5 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Goderich 4,655 | | Dundas 4,652 | | Preston 4,643 | | Paris 4,370 | |
|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 12,915 81 | 12,915 81 | 2,803 50 | 8,227 20 | ..... | ..... | 7,626 26 | 7,626 26 |
| 7,266 83 | 9,943 24 | 6,527 27 | 4,741 17 | 13,667 48 | 13,676 42 | 10,944 83 | 10,944 83 |
| 24,131 48 | 28,440 55 | 38,889 98 | 39,519 25 | 36,090 52 | 39,573 54 | 30,608 45 | 31,517 91 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6,587 57 | 6,581 72 | 7,851 91 | 9,556 93 | 12,800 35 | 13,501 69 | 4,491 51 | 5,258 11 |
| 9,970 58 | 10,327 51 | 7,226 28 | 8,522 81 | 11,085 14 | 12,301 42 | 6,467 62 | 7,289 38 |
| 4,495 29 | 4,915 52 | 1,708 67 | 1,740 34 | 2,561 53 | 2,743 78 | 2,114 05 | 2,114 05 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,967 26 | 3,990 81 | 5,984 67 | 5,840 41 | 5,255 35 | 6,294 12 | 210 04 | 210 04 |
| ..... | ..... | ..... | ..... | ..... | ..... | 15,000 00 | ..... |
| 9,230 65 | 8,231 05 | 2,110 38 | 1,960 38 | 23,549 22 | 23,549 22 | 19,275 66 | 19,271 46 |
| 76,565 47 | 85,346 21 | 73,102 66 | 80,108 49 | 105,009 59 | 111,640 19 | 96,738 42 | 84,232 04 |
| 161 43 | 8,053 02 | ..... | ..... | ..... | ..... | ..... | ..... |
| 232 87 | 375 81 | 1,810 49 | 1,250 09 | 812 11 | 1,472 60 | 41 32 | 22,13 |
| 7,375 10 | 2,929 34 | ..... | 2,834 68 | 5,139 61 | 4,603 14 | ..... | 75,12 |
| 2,767 40 | 2,883 30 | ..... | ..... | ..... | ..... | 4,353 17 | 6,857 22 |
| ..... | ..... | ..... | ..... | ..... | 183 80 | ..... | ..... |
| 87,102 27 | 99,587 68 | 74,913 15 | 84,193 26 | 110,961 31 | 117,899 73 | 101,132 91 | 91,186 51 |
| 52,925 75 | 51,233 87 | 50,905 67 | 50,039 67 | 67,984 96 | 64,769 69 | 62,588 88 | 55,049 42 |
| ..... | 8,130 24 | ..... | ..... | 2,073 75 | 1,575 44 | ..... | ..... |
| ..... | ..... | 11,155 46 | 13,764 99 | 8,735 25 | 13,813 32 | 160 70 | 2,219 66 |
| ..... | ..... | ..... | ..... | ..... | ..... | 4,196 87 | ..... |
| 52,925 75 | 59,364 11 | 62,061 13 | 63,804 66 | 78,793 96 | 80,158 45 | 66,946 45 | 57,269 08 |
| 3,162 30 | 4,854 18 | 2,094 33 | 2,960 33 | 9,880 55 | 13,095 82 | 29,411 12 | 21,950 58 |
| 2,767 40 | 2,883 30 | ..... | ..... | ..... | ..... | 4,353 17 | 6,857 22 |
| 6,670 00 | 9,270 00 | 7,083 00 | 9,149 00 | 13,548 34 | 17,048 34 | ..... | 2,000 00 |
| 21,576 82 | 23,216 09 | 3,674 69 | 8,279 27 | 8,738 46 | 7,597 12 | 422 17 | 3,109 63 |
| 87,102 27 | 99,587 68 | 74,913 13 | 84,193 26 | 110,961 31 | 117,899 73 | 101,132 91 | 91,186 51 |
| 60.7 | 59.6 | 82.3 | 75.8 | 71.0 | 68.0 | 66.3 | 62.8 |

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

| Municipality | Wallaceburg | | Simcoe | |
|---|---|---|---|---|
| Population | 4,107 | | 4,061 | |
| —— | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 1,753 84 | 3,876 29 | 1,486 55 | 1,496 75 |
| Sub-Station Equipment | ..... | 760 50 | 3,668 01 | 5,851 99 |
| Distribution System, Overhead | 10,401 94 | 18,935 55 | 17,194 16 | 17,330 44 |
| " " Underground | ..... | ..... | ..... | ..... |
| Line Transformers | 1,799 07 | 3,687 92 | 1,786 07 | 2,270 87 |
| Meters | 2,931 10 | 6,574 53 | 1,117 47 | 1,534 55 |
| Street Light Equipment, Regular | 70 55 | 1,568 81 | 1,478 85 | 1,478 85 |
| " " Ornamental | ..... | ..... | 1,181 83 | 1,181 83 |
| Miscel. Equip. and Construction Exp. | 2,302 41 | 3,229 32 | 3,140 28 | 3,662 16 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... |
| Old Plant | 26,017 56 | 23,884 42 | 931 92 | 927 92 |
| Total Plant | 45,276 47 | 62 517 34 | 31,985 14 | 35,735 36 |
| Bank and Cash Balance | ..... | ..... | 4,636 00 | 5.222 56 |
| Inventories | 784 15 | 3,515 34 | 395 45 | 86 00 |
| Accounts Receivable | 1,276 81 | 2,874 81 | 789 90 | 789 90 |
| Sinking Fund | ..... | ..... | ..... | ..... |
| Other Assets | ..... | ..... | ..... | ..... |
| Total Assets | 47,337 43 | 68,907 49 | 37,806 49 | 41,833 82 |
| LIABILITIES AND RESERVES | | | | |
| Liabilities | | | | |
| Debenture Balance | 44,389 16 | 43,744 15 | 35,434 90 | 35,434 90 |
| Accounts Payable | 1,229 34 | 21,362 02 | 281 46 | 866 14 |
| Bank Overdraft | 569 54 | 1,223 19 | ..... | ..... |
| Other Liabilities | 450 00 | 100 00 | ..... | 3,500 00 |
| Total Liabilities | 46,638 04 | 66,429 36 | 35,716 36 | 39,801 04 |
| Reserves | | | | |
| Debentures Paid | 610 84 | 1,255 85 | ..... | ..... |
| Sinking Fund Reserve | ..... | ..... | ..... | ..... |
| Depreciation Reserve | ..... | 1,038 00 | ..... | 1,350 00 |
| Surplus | 88.55 | 184 28 | 2,090 13 | 682 78 |
| Total Liabilities and Reserves | 47,337 43 | 68,907 49 | 37,806 49 | 41,833 82 |
| Percentage of Net Debt to Total Assets | 98.5 | 96.4 | 94.4 | 95.1 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Brampton 4,041 | | St. Mary's 3,960 | | Penetanguishene 3,928 | | Petrolia 3,891 |
|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 3,808 08 | 3,808 08 | 13,674 27 | 13,674 27 | 2,151 00 | 2,151 00 | ..... |
| 5,200 25 | 8,995 62 | 13,002 74 | 11,837 64 | 3,507 71 | 3,507 71 | 2,360 59 |
| 31,951 88 | 31,947 38 | 22,025 40 | 23,365 50 | 24,333 58 | 24,811 72 | 14,897 59 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 9,141 24 | 10,039 24 | 10,695 83 | 11,907 19 | 3,846 07 | 4,535 87 | 3,824 69 |
| 9,403 89 | 9,651 13 | 12,709 33 | 13,311 59 | 5,191 76 | 5,408 94 | 4,143 66 |
| 1,799 02 | 1,805 73 | 5,049 39 | 5,888 52 | 1,721 95 | 1,721 95 | 818 01 |
| ..... | ..... | ..... | ..... | ..... | ..... | 3,864 07 |
| 2,904 61 | 2,904 61 | 1,713 53 | 2,084 77 | 278 93 | 278 93 | 3,903 29 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 15,000 00 | 15,000 00 | ..... | ..... | 2,874 00 | 2,874 00 | 8,740 44 |
| 79,208 97 | 84,151 79 | 78,870 49 | 82,069 48 | 43,905 00 | 45,290 12 | 42,552 34 |
| 5,663 24 | 1,800 14 | 3,430 53 | 4,033 61 | ..... | ..... | ..... |
| 129 84 | 360 33 | 1,207 66 | 1,598 94 | 513 50 | 533 09 | 1,746 96 |
| ..... | 3,552 08 | 1,685 00 | 1,685 00 | 3,659 27 | 2,932 05 | ..... |
| ..... | ..... | 1,594 91 | 2,140 51 | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 85,002 05 | 89,864 34 | 86,788 59 | 91,527 54 | 48,077 77 | 48,755 26 | 44,299 30 |
| 63,070 87 | 61,180 02 | 42,635 27 | 40,275 79 | 28,197 45 | 27,505 90 | 34,516 80 |
| ..... | ..... | 5,980 63 | 7,526 39 | ..... | ..... | 7,573 21 |
| ..... | ..... | ..... | ..... | 1,712 04 | 215 16 | 1,655 26 |
| ..... | ..... | ..... | ..... | ..... | 300 00 | ..... |
| 63,070 87 | 61,180 02 | 48,615 90 | 47,802 18 | 29,909 49 | 28,021 06 | 43,745 27 |
| 5,979 77 | 7,870 62 | 20,611 75 | 22,971 23 | 2,802 55 | 3,494 10 | 483 20 |
| ..... | ..... | 1,594 91 | 2,140 51 | ..... | ..... | ..... |
| 11,200 00 | 14,200 00 | 6,940 00 | 9,840 00 | 7,445 00 | 9,225 00 | ..... |
| 4,751 41 | 6,613 70 | 9,026 03 | 8,773 62 | 7,920 73 | 8,015 10 | 70 83 |
| 85,002 05 | 89,864 34 | 86,788 59 | 91,527 54 | 48,077 77 | 48,755 26 | 44,299 30 |
| 74.2 | 68.1 | 56.0 | 52.2 | 62.2 | 57.5 | 98.8 |

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

| Municipality | Tillsonburg | | Strathroy | |
|---|---|---|---|---|
| Population | 3,084 | | 2,998 | |
| —— | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 1,974 27 | 1,974 27 | 1,070 00 | 1,070 00 |
| Sub-Station Equipment | 6,818 47 | 6,818 47 | 4,175 40 | 4,691 16 |
| Distribution System, Overhead | 18,252 15 | 19,135 69 | 15,841 42 | 16,649 55 |
| " " Underground | ..... | ..... | ..... | ..... |
| Line Transformers | 4,041 90 | 3,408 92 | 3,211 14 | 3,460 85 |
| Meters | 4,638 91 | 5,016 13 | 3,534 75 | 4,731 00 |
| Street Light Equipment, Regular | 1,762 50 | 1,762 50 | 1,463 28 | 1,499 14 |
| " " Ornamental | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 918 83 | 918 83 | 555 15 | 578 15 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... |
| Old Plant | ..... | ..... | 12,824 13 | 12,343 15 |
| Total Plant | 38,407 03 | 39,034 81 | 42,675.27 | 45,023 00 |
| Bank and Cash Balance | 3,804 89 | 5,587 50 | 3,496 96 | 3,602 89 |
| Inventories | 1,271 84 | 3,104 63 | 152 66 | 4,523 64 |
| Accounts Receivable | 3,331 74 | 1,584 87 | ..... | ..... |
| Sinking Fund | 880 26 | 1,337 49 | ..... | ..... |
| Other Assets | ..... | ..... | ..... | ..... |
| Total Assets | 47,695 76 | 50,649 30 | 46,324 89 | 53,149 53 |
| LIABILITIES AND RESERVES | | | | |
| Liabilities | | | | |
| Debenture Balance | 33,605 10 | 32,895 86 | 15,486 92 | 44,698 73 |
| Accounts Payable | 700 00 | 727 12 | 26,941 40 | 536 95 |
| Bank Overdraft | ..... | ..... | ..... | ..... |
| Other Liabilities | ..... | ..... | ..... | ..... |
| Total Liabilities | 34,305 10 | 33,622 98 | 42,428 32 | 45,235 68 |
| Reserves | | | | |
| Debentures Paid | 2,394 90 | 3,104 14 | 745 08 | 1,533 27 |
| Sinking Fund Reserve | 880 26 | 1,337 49 | ..... | ..... |
| Depreciation Reserve | 6,311 50 | 7,911 50 | 1,500 00 | 2,550 00 |
| Surplus | 3,804 00 | 4,673 19 | 1,651 49 | 3,830 58 |
| Total Liabilities and Reserves | 47,695 76 | 50,649 30 | 46,324 89 | 53,149 53 |
| Percentage of Net Debt to Total Assets | 71.9 | 66.4 | 91.6 | 84.7 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Hespeler 2,740 | | Prescott 2,740 | | Orange-ville 2,493 | Listowel 2,326 | Ridge-town 2,329 | Elmira 2,270 | |
|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1916 | 1916 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 3,499 23 | 3,499 23 | 2,753 04 | 2,761 54 | 100 00 | ..... | ..... | ..... | ..... |
| 8,471 64 | 8,502 78 | ..... | ..... | ..... | ..... | 889 26 | ..... | ..... |
| 6,686 61 | 7,171 70 | 23,886 23 | 24,405 64 | 13,330 35 | 3,582 31 | 8,780 65 | 9,009 28 | 9,747 18 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 4,880 87 | 4,886 87 | 5,028 61 | 5,468 06 | 707 67 | 2,123 63 | 1,789 62 | 2,317 42 | 2,396 92 |
| 4,175 69 | 4,583 14 | 7,354 45 | 7,523 11 | 919 46 | 2,698 72 | 1,949 33 | 2,550 46 | 2,686 73 |
| 815 07 | 1,009 68 | 1,288 30 | 1,316 52 | 784 65 | 1,686 20 | 823 17 | 578 29 | 607 84 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 93 08 | 93 08 | 1,118 53 | 1,127 53 | 431 39 | 897 33 | 1,030 89 | 2,076 74 | 2,076 74 |
| ..... | ..... | 12,108 35 | 12,108 35 | ..... | 20,261 59 | 373 35 | ..... | ..... |
| 3,000 00 | 3,000 00 | ..... | ..... | 11,849 50 | ..... | 8,066 14 | 2,296 27 | 2,295 52 |
| 31,622 19 | 32,746 48 | 53,537 51 | 54,710 75 | 28,123 02 | 31,249 78 | 23,702 41 | 18,828 46 | 19,810 93 |
| 2,522 35 | 3,835 89 | ..... | 296 25 | ..... | 1,695 16 | 3,064 20 | 5,000 25 | 6,196 10 |
| ..... | ..... | ..... | ..... | 974 16 | 2,501 94 | 989 55 | 96 03 | 123 28 |
| 184 33 | 246 68 | 441 53 | 588 72 | 730 53 | 1,108 05 | 341 00 | 139 85 | 61 32 |
| ..... | ..... | 460 00 | 617 92 | ..... | ..... | ..... | ..... | ..... |
| b *1108 06* | ..... | ..... | ..... | ..... | 4,925 89 | ..... | ..... | ..... |
| 35,436 93 | 36,829 05 | 54,439 04 | 56,213 64 | 29,827 71 | 41,480 82 | 28,097 16 | 24,064 59 | 26,191 63 |
| 26,720 76 | 24,909 72 | 22,548 34 | 21,862 15 | 28,286 12 | 34,178 52 | 18,759 89 | 19,494 04 | 19,241 06 |
| 141 42 | 838 19 | 350 00 | ..... | 1,296 91 | 442 68 | ..... | ..... | ..... |
| ..... | ..... | 115 78 | ..... | ..... | ..... | 1,225 12 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | 1,348 66 | 1,319 10 | ..... | ..... |
| 26,862 18 | 25,747 91 | 23,014 12 | 21,862 15 | 29,583 03 | 35,969 86 | 21,304 11 | 19,494 04 | 19,241 06 |
| 5,849 75 | 7,660 79 | 1,431 00 | 2,117 19 | ..... | 1,411 37 | 696 10 | 505 96 | 758 94 |
| ..... | ..... | 460 00 | 617 92 | ..... | ..... | ..... | ..... | ..... |
| 2,725 00 | 3,403 56 | 1,950 00 | 5,830 00 | ..... | ..... | 425 00 | 1,400 00 | 2,020 00 |
| ..... | 16 79 | 27,583 92 | 25,786 38 | 244 68 | 4,099 59 | 5,671 95 | 2,664 59 | 4,171 63 |
| 35,436 93 | 36,829 05 | 54,439 04 | 56,213 64 | 29,827 71 | 41,480 82 | 28,097 16 | 24,064 59 | 26,191 63 |
| 75.7 | 69.9 | 42.3 | 38.9 | 99.2 | 86.7 | 75.8 | 81.0 | 73.4 |

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality | Clinton | | Weston | | Milton | |
|---|---|---|---|---|---|---|
| Population | 2,177 | | 2,156 | | 2,072 | |
| —— | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | ..... | ..... | 3,230 94 | 3,230 94 | ..... | ..... |
| Sub-Station Equipment | 7,738 47 | 7,738 47 | 4,985 23 | 5,450 72 | 5,550 19 | 5,550 19 |
| Dist. System, Overhead | 10,391 70 | 10,719 10 | 11,875 08 | 13,525 06 | 10,354 52 | 10,354 52 |
| " Underground | ..... | ..... | ..... | ..... | ..... | ..... |
| Line Transformers | 2,139 79 | 2,496 79 | 4,871 82 | 5,680 72 | 1,881 05 | 1,966 05 |
| Meters | 2,683 27 | 2,865 04 | 3,848 68 | 4,260 69 | 3,126 86 | 3,282 59 |
| Street Light Equip. Regular | 206 41 | 206 41 | 1,914 16 | 1,936 66 | 935 43 | 935 43 |
| " Ornamental | ..... | ..... | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Con. Exp. | 3,310 45 | 3,310 45 | 2,831 67 | 2,833 77 | 2,486 23 | 2,486 23 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... | ..... | ..... |
| Old Plant | 13,456 00 | 12,085 32 | ..... | ..... | 4,344 48 | 4,065 85 |
| Total Plant | 39,926 09 | 39,421 58 | 33,557 58 | 36,918 56 | 28,678 76 | 28,640 86 |
| Bank and Cash Balance | 392 93 | 1,329 56 | ..... | 878 60 | 1,171 63 | 3,553 37 |
| Inventories | 736 86 | 1,697 68 | 117 23 | 72 89 | 1,882 83 | 2,468 43 |
| Accounts Receivable | 71 67 | 71 67 | 1,344 16 | 4,689 88 | 2,737 21 | 3,924 16 |
| Sinking Fund | 1,584 80 | 2,557 29 | 2,096 65 | ..... | ..... | ..... |
| Other Assets | ..... | ..... | ..... | ..... | ..... | ..... |
| Total Assets | 42,712 35 | 45,077 78 | 37,175 62 | 42,559 93 | 34,470 43 | 38,586 82 |
| LIABILITIES AND RESERVES | | | | | | |
| Liabilities | | | | | | |
| Debenture Balance | 40,500 00 | 40,500 00 | 17,234 76 | 16,492 60 | 21,274 54 | 19,982 95 |
| Accounts Payable | 247 35 | ..... | 1,449 79 | 3,181 50 | ..... | ..... |
| Bank Overdraft | ..... | ..... | ..... | ..... | ..... | ..... |
| Other Liabilities | ..... | ..... | 1,350 57 | ..... | ..... | 300 00 |
| Total Liabilities | 40,747 35 | 40,500 00 | 20,035 12 | 19,674 10 | 21,274 54 | 20,282 95 |
| Reserves | | | | | | |
| Debentures Paid | ..... | ..... | 2,733 12 | 3,475,28 | 3,438 44 | 4,730 03 |
| Sinking Fund Reserve | 1,584 80 | 2,557 29 | ..... | ..... | ..... | ..... |
| Depreciation Reserve | 380 20 | 1,200 00 | 5,620 00 | 7,220 00 | 3,240 00 | 4,140 00 |
| Surplus | ..... | 820 49 | 8,787 38 | 12,190 55 | 6,517 45 | 9,433 84 |
| Total Liabilities and Reserves | 42,712 35 | 45,077 78 | 37,175 62 | 42,559 93 | 34,470 43 | 38,586 82 |
| Percentage of Net Debt to Total Assets | 95.4 | 89.9 | 53.9 | 46.2 | 61.7 | 52.5 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Mimico 1,976 | | Chesley 1,975 | Seaforth 1,964 | | Mount Forest 1941 | Georgetown 1,905 | |
|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1916 | 1915 | 1916 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 98 30 | 98 30 | ..... | 1,203 25 | 1.204 53 | 3,725 00 | 12 00 | 12 00 |
| ..... | ..... | 585 17 | 6,031 75 | 6.031 75 | 686 75 | ..... | ..... |
| 16,958 20 | 18,953 45 | 13,872 32 | 14,700 33 | 14,987 19 | 13,817 62 | 13,646 65 | 15,996 12 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,592 62 | 2,210 37 | 1,312 85 | 3,212 30 | 4,086 58 | 1,926 64 | 5,233 91 | 6,471 35 |
| 4,953 01 | 5,935 62 | 1,864 28 | 3,642 67 | 3,992 92 | 2,307 58 | 3,564 24 | 4,104 95 |
| 1,022 20 | 1,022 20 | 816 26 | 797 34 | 805 25 | 1,655 77 | 956 14 | 956 14 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,355 99 | 1,308 49 | 2,612 12 | 355.98 | 355 98 | 876 07 | 1,184 25 | 1,193 20 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 5,509 60 | ..... | ..... | 4,059 92 | 2,209 80 | 2,209 80 |
| 25,980 32 | 29,528 43 | 26,572 69 | 29,943 62 | 31,464 20 | 29,055 35 | 26,806 99 | 30,943 56 |
| 459 59 | 1,207 29 | ..... | 628 68 | 1,396 83 | 1,335 00 | 994 45 | 1,049 53 |
| 133 03 | 20 00 | 350 00 | 2,686 32 | 2,744 57 | 509 42 | 608 73 | 824 87 |
| 531 59 | 656 29 | 780 57 | 130 57 | 132 95 | 669 83 | 457 38 | 432 92 |
| ..... | ..... | ..... | 1,892 86 | 2,414 32 | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 27,104 53 | 31,412 01 | 27,703 17 | 35,282 05 | 38,152 87 | 31,569 60 | 28,867 55 | 33,250 88 |
| 16,858 35 | 18,368 36 | 21,854 71 | 25,000 00 | 25,000 00 | 17,576 36 | 19,478 86 | 19,194 59 |
| 3,458 89 | 3,608 40 | 4,429 51 | ..... | ..... | 7,307 02 | 306 80 | ..... |
| ..... | ..... | 179 96 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 20,317 24 | 21,976 76 | 26 464 18 | 25,000 00 | 25,000 00 | 24,883 38 | 19,785 66 | 19,194 59 |
| 1,141 65 | 1,631 64 | 645 29 | ..... | ..... | 4,423 64 | 512 14 | 805 41 |
| ..... | ..... | ..... | 1,892 86 | 2,414 32 | ..... | ..... | ..... |
| 2,860 00 | 3,860,00 | ..... | 4,150 00 | 5,375 00 | 615 00 | 2,430 00 | 3,640.00 |
| 2,785 64 | 3,943,61 | 593 70 | 4,239 19 | 5,363 55 | 1,647 58 | 6,130 75 | 9,610.88 |
| 27,104 53 | 31,412 01 | 27,703 17 | 35,282 05 | 38,152 87 | 31,569 60 | 28,867 55 | 33,250 88 |
| 74.9 | 70.0 | 95.5 | 70.8 | 65.5 | 78.5 | 68.5 | 57.7 |

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality | Palmerston | Fergus | | Tilbury | |
|---|---|---|---|---|---|
| Population | 1,843 | 1,776 | | 1,740 | |
| —— | 1916 | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | ..... | ..... | ..... | ..... | 957 46 |
| Sub-Station Equipment | 691 88 | ..... | ..... | ..... | ..... |
| Distribution System, Overhead | 5,611 28 | 8,144 42 | 8,988 86 | 5,268 42 | 5,303 84 |
| " " Underground | ..... | ..... | ..... | ..... | ..... |
| Line Transformers | 1,620 66 | 2,074 38 | 2,434 47 | 1,057 60 | 1,177 10 |
| Meters | 1,435 43 | 2,109 83 | 2,515 02 | 1,563 05 | 1,735 21 |
| Street Light Equipment, Regular | 489 49 | 826 27 | 826 27 | 176 35 | 194 49 |
| " " Ornamental | ..... | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 672 47 | 543 57 | 562 37 | 893 10 | 1.159 48 |
| Steam or Hydraulic Plant | 12,429 55 | ..... | ..... | ..... | ..... |
| Old Plant | ..... | 2,546 59 | 2,440 33 | 4,244 20 | 3,644 20 |
| Total Plant | 22,950 76 | 16,245 06 | 17,767 32 | 13,202 72 | 14,171 78 |
| Bank and Cash Balance | ..... | ..... | ..... | 218 47 | 509 19 |
| Inventories | 1,985 05 | 2,750 83 | 2,546 59 | 129 87 | 40 91 |
| Accounts Receivable | 5,741 25 | ..... | 313 03 | 2,065 75 | 4 17 |
| Sinking Fund | ..... | ..... | ..... | ..... | ..... |
| Other Assets | ..... | ..... | ..... | ..... | ..... |
| Total Assets | 30,677 06 | 18,995 89 | 20,626 99 | 15,616 81 | 14,726 05 |
| LIABILITIES AND RESERVES | | | | | |
| Liabilities | | | | | |
| Debenture Balance | 14,736 87 | 15,779 11 | 15,546 07 | 9,873 52 | 13,739 44 |
| Accounts Payable | 5,225 48 | ..... | 357 50 | 5,350 46 | ..... |
| Bank Overdraft | 207 71 | 1,483 32 | 8 31 | ..... | ..... |
| Other Liabilities | ..... | ..... | ..... | ..... | ..... |
| Total Liabilities | 20,170 06 | 17,262 43 | 15,911 88 | 15,223 98 | 13,739 44 |
| Reserves | | | | | |
| Debentures Paid | 7,263 13 | 220 89 | 453 93 | 126 48 | 260 56 |
| Sinking Fund Reserve | ..... | ..... | ..... | ..... | ..... |
| Depreciation Reserve | 295 00 | 650 00 | 1,150 00 | ..... | 275 00 |
| Surplus | 2,948 87 | 862 57 | 3,111 18 | 266 35 | 451 05 |
| Total Liabilities and Reserves | 30,677 06 | 18,995 89 | 20,626 99 | 15,616 81 | 14,726 05 |
| Percentage of Net Debt to Total Assets | 65.8 | 90.8 | 77.1 | 97.6 | 93.3 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Acton 1,735 | | Gravenhurst 1,702 | Mitchell 1,687 | | Durham 1,600 | Exeter 1,572 |
|---|---|---|---|---|---|---|
| 1915 | 1916 | 1916 | 1915 | 1916 | 1916 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 1,500 00 | 1,500 00 | 12,258 29 | 4,550 44 | 4,796 10 | ..... | ..... |
| 597 62 | 597 62 | 11,074 20 | 9,034 86 | 9,034 86 | 584 88 | ..... |
| 4,839 74 | 5,142 52 | 25,870 73 | 7,631 03 | 8,119 67 | 11,917 19 | 11,693 79 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,696 50 | 2,164 50 | 578 25 | 1,113 82 | 1,113 82 | 971 92 | 1,494 04 |
| 2,109 15 | 2,391 48 | 3,632 16 | 2,564 87 | 2,827 43 | 1,059 18 | 2,276 12 |
| 896 21 | 896 21 | ..... | 978 00 | 1,063 55 | 699 56 | 721 38 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 777 99 | 777 99 | 1,542 00 | ..... | ..... | 547 24 | 1,451 48 |
| ..... | ..... | ..... | 1,500 00 | 1,500 00 | ..... | ..... |
| 3,510 85 | 3,510 85 | ..... | ..... | ..... | 2,300 00 | ..... |
| 15,928 06 | 16,981 17 | 54,955 63 | 27,373 02 | 28,455 43 | 18,079 97 | 17,636 81 |
| 2,200 50 | 2,726 25 | 590 79 | 1,354 31 | ..... | 213 04 | ..... |
| 276 03 | 654 33 | 1,173 19 | 800 00 | 945 38 | ..... | 546 70 |
| ..... | ..... | 2,374 24 | 337 97 | 2,385 79 | ..... | 457 20 |
| 4,156 00 | 4,358 00 | 2,569 73 | ..... | ..... | ..... | ..... |
| ..... | ..... | 81,952 92 | ..... | ..... | *b 103 41* | ..... |
| 22,560 59 | 24,719 75 | 143,616 50 | 29,865 30 | 31,786 60 | 18,396 42 | 18,640 71 |
| 13,973 03 | 13,689 62 | 95,853 05 | 8,816 25 | 9,919 45 | 12,646 61 | 17,240 08 |
| 322 00 | 322 00 | 379 73 | 993 33 | 450 00 | 5,396 42 | 378 87 |
| ..... | ..... | ..... | ..... | 986 85 | ..... | 65 92 |
| ..... | ..... | 25,093 20 | ..... | ..... | ..... | ..... |
| 14,295 03 | 14,011 62 | 121,325 98 | 9,809 58 | 11,356 30 | 18,043 03 | 17,684 87 |
| 526 97 | 810 38 | 17,596 21 | 6,036 53 | 7,375 77 | 353 39 | 419 05 |
| 4,156 00 | 4,358 00 | 2,337 94 | ..... | ..... | ..... | ..... |
| 1,500 00 | 2,000 00 | 1,650 00 | 4,377 21 | 5,377 21 | ..... | ..... |
| 2,082 59 | 3,539 75 | 706 37 | 9,641 98 | 7,677 32 | ..... | 536 79 |
| 22,560 59 | 24,719 75 | 143,616 50 | 29,865 30 | 31,786 60 | 18,396 42 | 18,640 71 |
| 63.4 | 56.6 | 84.5 | 32.8 | 35.7 | ..... | 95.4 |

"b" Operating losses shown in italics.

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality<br>Population | New Hamburg<br>1,543 | | Dresden<br>1,521 | | Victoria Harbor<br>1,477 |
|---|---|---|---|---|---|
| —— | 1915 | 1916 | 1915 | 1916 | 1915 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 2,257 59 | 2,257 59 | ..... | ..... | ..... |
| Sub-Station Equipment | 1,083 10 | 1,083 10 | 523 00 | 523 00 | ..... |
| Distribution System, Overhead | 8,114 35 | 8,281 57 | 5,999 51 | 6,011 99 | 134 49 |
| " " Underground | ..... | ..... | ..... | ..... | ..... |
| Line Transformers | 2,664 75 | 2,664 75 | 1,418 21 | 1,418 21 | ..... |
| Meters | 3,127 07 | 3,257 25 | 2,605 72 | 2,743 76 | 265 85 |
| Street Light Equipment, Regular | 1,149 43 | 1,149 43 | 715 38 | 715 38 | ..... |
| " " Ornamental | ..... | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 958 48 | 958 48 | 398 43 | 404 24 | 21 34 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... | ..... |
| Old Plant | 5,242 56 | 5,242 56 | 6,026 59 | 5,766 54 | 4,800 00 |
| Total Plant | 24,597 33 | 24,894 73 | 17,686 84 | 17,583 12 | 5,221 68 |
| Bank and Cash Balance | 202 24 | 789 57 | 644 67 | 814 27 | 1,680 05 |
| Inventories | 4,511 38 | 4,246 78 | 542 22 | 610 46 | ..... |
| Accounts Receivable | 1,083 13 | 646 13 | ..... | ..... | ..... |
| Sinking Fund | ..... | ..... | ..... | ..... | ..... |
| Other Assets | ..... | ..... | ..... | ..... | ..... |
| Total Assets | 30,394 08 | 30,577 21 | 18,873 73 | 19,007 85 | 6,901 73 |
| LIABILITIES AND RESERVES | | | | | |
| Liabilities | | | | | |
| Debenture Balance | 16,509 00 | 16,163 22 | 15,950 94 | 15,340 47 | 6,500 00 |
| Accounts Payable | 1,217 86 | 242 67 | 2,503 99 | 2,433 84 | 211 83 |
| Bank Overdraft | ..... | ..... | ..... | ..... | ..... |
| Other Liabilities | ..... | ..... | ..... | ..... | 45 97 |
| Total Liabilities | 17,726 86 | 16,405 89 | 18,454 93 | 17,774 31 | 6,757 80 |
| Reserves | | | | | |
| Debentures Paid | 1,220 08 | 1,565 86 | 287 31 | 897 78 | ..... |
| Sinking Fund Reserve | ..... | ..... | ..... | ..... | ..... |
| Depreciation Reserve | 3,845 00 | 4,675 00 | ..... | 314 74 | ..... |
| Surplus | 7,602 14 | 7,930 46 | 131 49 | 21 02 | 143 93 |
| Total Liabilities and Reserves | 30,394 08 | 30,577 21 | 18,873 73 | 19,007 85 | 6,901 73 |
| Percentage of Net Debt to Total Assets | 58.1 | 53.7 | 98.0 | 92.0 | 97.9 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Victoria Harbor 1,477 | Blenheim 1,424 | Harriston 1,404 | Pt. Dalhousie 1,318 | | Caledonia 1,217 | | Norwich 1,189 | |
|---|---|---|---|---|---|---|---|---|
| 1916 | 1916 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | 910 40 | 910 40 |
| ..... | 909 64 | 600 00 | ..... | ..... | ..... | ..... | ..... | ..... |
| 4,727 86 | 9,543 23 | 6,948 25 | 3,273 52 | 3,658 63 | 4,651 20 | 4,881 97 | 6,504 04 | 6,708 36 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 600 00 | 1,330 76 | 1,740 00 | 1,792 00 | 2,541 43 | 391 65 | 565 65 | 1,149 41 | 1,541 12 |
| 1,154 47 | 2,085 93 | 1,915 66 | 2,124 13 | 3,647 85 | 761 27 | 947 44 | 2,293 66 | 2,476 93 |
| 127 81 | 823 67 | 350 00 | 268 67 | 268 67 | 349 62 | 441 49 | 546 06 | 546 06 |
| ..... | 1,475 64 | ..... | ..... | ..... | ..... | ..... | ..... | 1,811 96 |
| 642 64 | 568 06 | 413 73 | 1,081 66 | 1,093 66 | 473 20 | 473 20 | 963 17 | 969 34 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 2,062 15 | 6,325 50 | 6,325 50 | ..... | ..... | 3,509 82 | 3,509 82 |
| 7,252,78 | 16,736 93 | 14,029 79 | 14,865 48 | 17,535 74 | 6,626 94 | 7,309 75 | 15,876 56 | 18,473 99 |
| 208 74 | 836 08 | 122 98 | ..... | 50 03 | 217 29 | 419 20 | 2,261 99 | 494 65 |
| ..... | ..... | 671 00 | 385 50 | 89 76 | ..... | ..... | 2,038 83 | 1,903 54 |
| ..... | 151 78 | 966 00 | 712 08 | 181 21 | ..... | ..... | 672 30 | 1,755 04 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | b *28 35* | ..... | ..... | ..... | ..... | 455 90 | ..... |
| 7,461 52 | 17,724 79 | 15,818 12 | 15,963 06 | 17,856 74 | 6,844 23 | 7,728 95 | 21,305 58 | 22,627 22 |
| 6,313 59 | 13,822 92 | 12,846 89 | 12,500 00 | 12,121 97 | 4,539 72 | 4,450 40 | 12,963 89 | 12,717 24 |
| ..... | 1,737 78 | 2,155 09 | 1,953 12 | 1,913 12 | 50 05 | 90 05 | 901 19 | 1,333 64 |
| ..... | ..... | ..... | 42 20 | 2,060 00 | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6,313 59 | 15,560 70 | 15,001 98 | 14,495 32 | 16,095 09 | 4,589 77 | 4,540 45 | 13,865 08 | 14,050 88 |
| 186 41 | 177 08 | 471 14 | ..... | 378 03 | 84 28 | 173 60 | 792 11 | 1,038 76 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 190 00 | 440 00 | 345 00 | 1,279 02 | 1,279 02 | 810 00 | 1,070 00 | 2,225 00 | 3,595 00 |
| 771 52 | 1,547 01 | ..... | 188 72 | 104 60 | 1,360 18 | 1,944 90 | 4,423 39 | 3,942 58 |
| 7,461 52 | 17,724 79 | 15,818 12 | 15,963 06 | 17,856 74 | 6,844 23 | 7,728 95 | 21,305 58 | 22,627 22 |
| 84.6 | 87.9 | 94.8 | 90.8 | 90.1 | 67.6 | 58.8 | 65.1 | 62.1 |

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality<br>Population | New Toronto<br>1,186 | | Waterford<br>1,134 | | Shelburne<br>1,115 |
|---|---|---|---|---|---|
| —— | 1915 | 1916 | 1915 | 1916 | 1916 |
| ASSETS: | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | ..... | ..... | ..... | ..... | ..... |
| Sub-Station Equipment | ..... | ..... | ..... | ..... | 566 60 |
| Distribution System, Overhead | 6,541 85 | 11,167 80 | 783 65 | 2,116 17 | 9,137 23 |
| " " Underground | ..... | ..... | ..... | ..... | ..... |
| Line Transformers | 1,474 23 | 2,964 38 | ..... | 914 36 | 399 01 |
| Meters | 1,502 25 | 2,319 68 | 73 80 | 1,331 10 | 391 75 |
| Street Light Equipment, Regular | 271 18 | 310 30 | ..... | 81 26 | 921 65 |
| " " Ornamental | ..... | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 1,200 37 | 1,200 37 | 156 11 | 352 77 | 2,102 07 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... | ..... |
| Old Plant | ..... | ..... | 6,789 32 | 5,151 53 | 3,779 40 |
| Total Plant | 10,989 88 | 17,962 53 | 7,802 88 | 9,947 19 | 17,297 71 |
| Bank and Cash Balance | ..... | 1,717 13 | 81 60 | 277 97 | 2,346 82 |
| Inventories | 124 77 | 124 77 | ..... | ..... | 12 20 |
| Accounts Receivable | 223 08 | 97 92 | 205 79 | 205 79 | ..... |
| Sinking Fund | ..... | ..... | ..... | ..... | ..... |
| Other Assets | ..... | ..... | ..... | ..... | ..... |
| Total Assets | 11,337 73 | 19,902 35 | 8,090 27 | 10,430 95 | 19,656 73 |
| LIABILITIES AND RESERVES | | | | | |
| Liabilities | | | | | |
| Debenture Balance | 7,753 14 | 7,620 39 | 6,803 44 | 5,811 26 | 14,468 79 |
| Accounts Payable | 1,371 76 | 6,218 49 | 217 90 | 2,325 82 | 4,180 99 |
| Bank Overdraft | 119 59 | ..... | ..... | ..... | ..... |
| Other Liabilities | ..... | ..... | 40 58 | 97 98 | ..... |
| Total Liabilities | 9,244 49 | 13,838 88 | 7,061 92 | 8,235 06 | 18,649 78 |
| Reserves | | | | | |
| Debentures Paid | 246 86 | 379 61 | 942 09 | 1,934 27 | 451 21 |
| Sinking Fund Reserve | ..... | ..... | ..... | ..... | ..... |
| Depreciation Reserve | 750 00 | 1,200 00 | ..... | ..... | ..... |
| Surplus | 1,096 38 | 4,483 86 | 86 26 | 261 62 | 555 74 |
| Total Liabilities and Reserves | 11,337 73 | 19,902 35 | 8,090 27 | 10,430 95 | 19,656 73 |
| Percentage of Net Debt to Total Assets | 81.5 | 69.6 | 83.5 | 79.0 | 94.9 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Elora 1,115 | | | Hagersville 1,105 | | Winchester 1,065 | | Port Credit 944 | |
|---|---|---|---|---|---|---|---|---|
| 1914 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | ..... | ..... | ..... | ..... | 224 15 | 224 15 | 675 00 | 675 00 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6,138 53 | 7,189 83 | 7,539 37 | 6,493 43 | 6,678 90 | 7,225 62 | 7,319 95 | 7,613 47 | 8,313 48 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 803 21 | 1,250 05 | 1,791 53 | 1,078 27 | 1,203 27 | 481 86 | 665 86 | 722 48 | 812 48 |
| 1,068 18 | 1,391 03 | 1,564 27 | 1,865 83 | 2,021 32 | 1,014 44 | 1,241 04 | 1,826 78 | 1,851 63 |
| 438 33 | 438 33 | 438 33 | 415 55 | 435 35 | 564 98 | 564 98 | 294 99 | 324 63 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 839 00 | 908 18 | 926 18 | 101 80 | 101 80 | 264 14 | 275 54 | 614 26 | 626 31 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,100 00 | 1,482 85 | 1,408 35 | ..... | ..... | 1,100 00 | 1,100 00 | ..... | ..... |
| 11,387 25 | 12,661 27 | 13,668 03 | 9,954 88 | 10,440 64 | 10,875 19 | 11,391 52 | 11,746 98 | 12,603 53 |
| 10 34 | 30 21 | 642 51 | 1,066 60 | 2,829 55 | 1,621 20 | 1,236 43 | 986 91 | 645 28 |
| 342 12 | 576 62 | 1,034 54 | 165 71 | 67 77 | 881 74 | 1,476 81 | ..... | ..... |
| ..... | ..... | 42 21 | ..... | ..... | ..... | ..... | 180 00 | 180 00 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 11,739 71 | 13,268 10 | 15,387 29 | 11,187 19 | 13,337 96 | 13,378 13 | 14,104 76 | 12,913 89 | 13,428 81 |
| 9,790 48 | 9,570 48 | 12,339 48 | 7,754 37 | 7,591 30 | 10,515 30 | 10,372 52 | 7,013 39 | 7,876 16 |
| 1,709 52 | 2,639 52 | 534 52 | ..... | ..... | 200 00 | ..... | 1,495 16 | 226 02 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 11,500 00 | 12,210 00 | 12,874 00 | 7,754 37 | 7,591 30 | 10,715 30 | 10,372 52 | 8,508 55 | 8,102 18 |
| 209 52 | 429 52 | 660 52 | 245 63 | 408 70 | 134 70 | 277 48 | 486 61 | 623 84 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 460 00 | 835 00 | 925 00 | 1,305 00 | 965 00 | 1,335 00 | 1,581 00 | 2,051 00 |
| 30 19 | 168 58 | 1,017 77 | 2,262 19 | 4,032 96 | 1,563 13 | 2,119 76 | 2,337 73 | 2,651 79 |
| 11,739 71 | 13,268 10 | 15,387 29 | 11,187 19 | 13,337 96 | 13,378 13 | 14,104 76 | 12,913 89 | 13,428 81 |
| 97.1 | 92.0 | 83.7 | 69.0 | 56.9 | 80.1 | 73.5 | 66.0 | 60.3 |

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality | Beaverton | | Markdale | Stayner | |
|---|---|---|---|---|---|
| Population | 1,015 | | 989 | 972 | |
| —— | 1915 | 1916 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 250 00 | 250 00 | | | |
| Sub-Station Equipment | | | 780 80 | 200 00 | 200 00 |
| Dist. System, Overhead | 5,912 64 | 5,901 74 | 5,983 31 | 3,467 35 | 7,530 29 |
| " " Underground | | | | | |
| Line Transformers | 470 75 | 470 75 | 378 50 | 959 03 | 1,350 14 |
| Meters | 1,720 22 | 1,836 96 | 841 94 | 875 08 | 1,224 79 |
| Street Light Equip., Regular | 453 44 | 453 44 | 522 62 | 386 31 | 478 16 |
| " " " Ornamental | | | | | |
| Miscel. Equip. and Con. Exp. | 1,141 32 | 1,141 32 | 549 06 | 128 40 | 287 77 |
| Steam or Hydraulic Plant. | | | | | |
| Old Plant | 3,787 92 | 3,787 92 | 2,080 65 | 4,490 15 | 4,213 01 |
| Total Plant | 13,736 29 | 13,842 13 | 11,136 88 | 10,506 32 | 15,284 16 |
| Bank and Cash Balance | 865 12 | 441 27 | 72 44 | 641 00 | 861 70 |
| Inventories | 403 42 | 213 40 | 2,230 68 | 66 44 | 51 19 |
| Accounts Receivable | | | | | 416 47 |
| Sinking Fund | | | | | |
| Other Assets | | | | | |
| Total Assets | 15,004 83 | 14,496 80 | 13,440 00 | 11,213 76 | 16,613 52 |
| LIABILITIES AND RESERVES | | | | | |
| Liabilities | | | | | |
| Debenture Balance | 9,691 45 | 9,525 51 | 8,886 16 | 8,221 10 | 12,929 70 |
| Accounts Payable | 5,004 83 | 4,496 80 | 3,236 98 | 1,072 16 | 1,009 66 |
| Bank Overdraft | | | | | |
| Other Liabilities | | | | | |
| Total Liabilities | 14,696 28 | 14,022 31 | 12,123 14 | 9,293 26 | 13,939 36 |
| Reserves | | | | | |
| Debentures Paid | 308 55 | 474 49 | 113 84 | 778 90 | 1,070 30 |
| Sinking Fund Reserve | | | | | |
| Depreciation Reserve | | | | 415 00 | 695 00 |
| Surplus | | | 1,203 02 | 726 60 | 908 86 |
| Total Liabilities and Reserves | 15,004 83 | 14,496 80 | 13,440 00 | 11,213 76 | 16,613 52 |
| Percentage of Net Debt to Total Assets | | 100.0 | 90.2 | 82.7 | 83.9 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Cannington 903 | | Milverton 893 | Dutton 870 | | Port Stanley 849 | | Chesterville 854 | |
|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | ..... | 206 00 | ..... | ..... | 1,505 37 | 1,505 38 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6,112 21 | 6,227 12 | 5,266 42 | 5,086 66 | 5,124 93 | 9,322 94 | 9,509 81 | 5,058 44 | 4,958 20 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 930 38 | 1,017 63 | 783 10 | 617 24 | 778 24 | 1,495 56 | 1,495 56 | 401 48 | 1,002 48 |
| 1,533 22 | 1,797 14 | 773 09 | 1,377 84 | 1,599 88 | 1,960 26 | 1,960 26 | 977 19 | 1,082 96 |
| 492 98 | 533 48 | 505 36 | 441 01 | 441 01 | 570 60 | 570 60 | 306 46 | 306 46 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 367 58 | 367 58 | 161 84 | 258 88 | 256 99 | 5,517 16 | 5,517 16 | 552 68 | 552 68 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3,699 37 | 3,609 37 | ..... | ..... | ..... | 1,000 00 | 975 00 | ..... | ..... |
| 13,135 74 | 13,552 32 | 7,695 81 | 7,781 63 | 8,201 05 | 21,371 90 | 21,533 77 | 7,296 25 | 7,902 78 |
| 1,034 58 | 355 01 | 102 54 | 427 02 | 1,766 37 | 4,495 30 | 5,551 04 | 383 85 | 100 25 |
| 649 78 | 668 00 | 141 30 | 394 74 | 79 50 | ..... | ..... | 578 75 | 671 31 |
| 170 62 | 247 40 | 2,000 00 | ..... | ..... | ..... | ..... | ..... | 128 97 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | b *54 47* | ..... |
| 14,990 72 | 14,822 83 | 9,939 65 | 8,603 39 | 10,046 92 | 25,867 20 | 27,084 81 | 8,313 32 | 8,803 31 |
| 11,834 35 | 11,659 58 | 9,227 50 | 8,407 49 | 8,407 49 | 17,487 16 | 17,128 79 | 4,858 20 | 4,781 40 |
| 2,991 72 | 2,822 73 | 405 93 | ..... | ..... | 20 00 | 30 00 | 2,807 38 | 2,382 49 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 334 94 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | 258 44 | 120 00 |
| 14,826 07 | 14,482 31 | 9,633 43 | 8,407 49 | 8,407 49 | 17,507 16 | 17,158 79 | 7,924 02 | 7,618 83 |
| 165 65 | 340 42 | 272 50 | ..... | ..... | 1,462 84 | 1,821 21 | 141 80 | 218 60 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | 240 00 | 3,078 08 | 3,743 08 | 247 50 | 622 50 |
| ..... | ..... | 33 72 | 195 90 | 1,399 43 | 3,819 12 | 4,361 73 | ..... | 343 38 |
| 14,990 72 | 14,822 73 | 9,939 65 | 8,603 39 | 10,046 92 | 25,867 20 | 27,084 81 | 8,313 32 | 8,803 31 |
| | 100.0 | 96.9 | 97.7 | 83.6 | 67.7 | 63.4 | 95.4 | 86.5 |

"b" Operating loss shown in italics.

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

| Municipality<br>Population | Ayr<br>800 | | Waterdown<br>785 | | Thamesville<br>769 | |
|---|---|---|---|---|---|---|
| —— | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 125 00 | 125 00 | .... .... | ..... | ..... | ..... |
| Sub-Station Equipment | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist System, Overhead | 2,934 89 | 2,985 40 | 7,024 71 | 7,083 27 | 3,418 12 | 3,600 40 |
| " Underground. | ..... | ..... | ..... | ..... | ..... | ..... |
| Line Transformers | 694 05 | 983 09 | 1,663 58 | 1,751 00 | 879 01 | 977 26 |
| Meters | 814 67 | 979 60 | 1,319 36 | 1,624 23 | 800 96 | 1,318 49 |
| Street Light Equip., Regular | 360 27 | 360 27 | 156 65 | 156 65 | 305 70 | 318 10 |
| " " Ornamental | ..... | ..... | ..... | ..... | ..... | .... .... |
| Miscel. Equip. and Con. Exp. | 785 49 | 785 49 | 100 34 | 100 34 | 392 35 | 561 75 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... | ..... | ..... |
| Old Plant | 3,959 68 | 6,635 73 | ..... | ..... | 4,893 30 | 4,703 40 |
| Total Plant | 9,674 05 | 12 854 58 | 10,264 64 | 10,715 49 | 10,689 44 | 11 479 40 |
| Bank and Cash Balance | ..... | ..... | 1,273 49 | 1,767 75 | ..... | 689 33 |
| Inventories | 115 24 | 58 84 | 4 44 | ..... | ..... | 240 00 |
| Accounts Receivable | 91 50 | 91 00 | ..... | ..... | 917 65 | 988 96 |
| Sinking Fund | ..... | .. ..... | ..... | ..... | ..... | ..... |
| Other Assets | ..... | ..... | ..... | ..... | ..... | ..... |
| Total Assets | 9,880 79 | 13,004 42 | 11,542 57 | 12,483 24 | 11,607 09 | 13 397 69 |
| LIABILITIES AND RESERVES | | | | | | |
| Liabilities | | | | | | |
| Debenture Balance | 9,346 58 | 11,067 91 | 7,430 16 | 7,038 74 | 4,937 80 | 10,930 33 |
| Accounts Payable | 133 70 | ..... | ..... | ..... | 1,463 42 | 1,081 64 |
| Bank Overdraft | 27 81 | 55 70 | ..... | ..... | 4,985 59 | ..... |
| Other Liabilities | ..... | ..... | ..... | ..... | ..... | ..... |
| Total Liabilities | 9,508 09 | 11,123 61 | 7,430 16 | 7,038 24 | 11,386 81 | 12,011 97 |
| Reserves | | | | | | |
| Debentures Paid | ..... | 993.67 | 569 84 | 961 26 | ..... | 257 47 |
| Sinking Fund Reserve | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Reserve | 250 00 | 510 00 | 1,785 00 | 2,672 00 | ..... | 190 00 |
| Surplus | 122 70 | 377 14 | 1,757 57 | 1,811 24 | 220 28 | 938 25 |
| Total Liabilities and Reserves | 9,880 79 | 13,004 42 | 11,542 57 | 12,483 24 | 11,607 09 | 13,397 69 |
| Percentage of Net Debt to Total Assets | 96.2 | 85.6 | 64.4 | 56.4 | 96.0 | 89.5 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Bolton 727 | | Dundalk 721 | Bothwell 707 | | Lucan 662 | | Woodbridge 639 | |
|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6,442 50 | 7,220 79 | 5,008 22 | 3,153 38 | 3,069 94 | 5,327 10 | 5,749 94 | 5,278 03 | 5,924 17 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 998 38 | 2,039 11 | 551 73 | 432 00 | 499 55 | 811 56 | 1,442 57 | 1,667 57 | 1,945 29 |
| 875 60 | 967 72 | 479 20 | 879 40 | 969 30 | 1,191 31 | 1,431 76 | 787 58 | 1,008 59 |
| 561 14 | 561 14 | 510 82 | 316 75 | 326 10 | 372 54 | 372 54 | 314 81 | 319 61 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 681 75 | 811 17 | 228 69 | 297 15 | 392 94 | 369 01 | 373 49 | 471 26 | 515 86 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,236 60 | 1,582 85 | 937 90 | 534 19 | 172 82 | 3,204 10 | 2,860 45 | ..... | ..... |
| 11,795 97 | 13,182 77 | 7,716 56 | 5,612 87 | 5,430 65 | 11,275 62 | 12,230 75 | 8,519 25 | 9,713 52 |
| 167 06 | 76 71 | 288 61 | 266 82 | 247 86 | 414 07 | 47 62 | 752 97 | 744 66 |
| 248 90 | 364 76 | 36 76 | ..... | ..... | 799 05 | 731 09 | 15 93 | ..... |
| 73 75 | 148 75 | ..... | 155 00 | 585 75 | ..... | ..... | 118 91 | 91 41 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | b *21 08* | ..... | ..... | ..... |
| 12,285 68 | 13,772 99 | 8,041 93 | 6,034 69 | 6,264 26 | 12,509 82 | 13,009 46 | 9,407 06 | 10,549 59 |
| 9,357 01 | 9,206 88 | 5,879 12 | 534 19 | 5,345 15 | 11,213 62 | 10,766 47 | 8,499 97 | 8,382 63 |
| 2,694 24 | 2,730 35 | 827 21 | 508 79 | ..... | 1,296 20 | 1,205 09 | ..... | 369 88 |
| ..... | ..... | ..... | 4,832 16 | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 12,051 25 | 11,937 23 | 6,706 33 | 5,875 14 | 5,345 15 | 12,509 82 | 11,971 56 | 8,499 97 | 8,752 51 |
| 142 99 | 293 12 | 457 78 | ..... | 189 04 | ..... | 447 15 | ..... | 117 34 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 321.00 | 200 00 | ..... | 135 00 | ..... | 270 00 | 425 00 | 725 00 |
| 91 44 | 1,221.64 | 677 82 | 159 55 | 595 07 | ..... | 320 75 | 482 09 | 954 74 |
| 12,285 68 | 13,772 99 | 8,041 93 | 6,034 69 | 6,264 26 | 12,509 82 | 13,009 46 | 9,407 06 | 10,549 59 |
| 98.0 | 86.7 | 83.4 | 97.0 | 85.3 | 100.0 | 92.1 | 89.0 | 82.9 |

"b" Operating loss shown in italics.

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality<br>Population | Ailsa Craig<br>586 | Creemore<br>585 | | Coldwater<br>579 | | Wyoming<br>544 |
|---|---|---|---|---|---|---|
| —— | 1916 | 1915 | 1916 | 1915 | 1916 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | | | | 275 00 | 275 00 | |
| Sub-Station Equipment | | | | | | |
| Dist System, Overhead | 4,406 27 | 4,150 11 | 4,181 44 | 5,278 18 | 5,295 16 | 5,105 92 |
| " " Underground. | | | | | | |
| Line Transformers | 657 46 | 681 39 | 681 39 | 1,010 77 | 1,010 77 | 471 17 |
| Meters | 547 49 | 738 56 | 844 47 | 1,114 04 | 1,193 44 | 607 77 |
| Street Light Equip., Regular | 362 97 | 272 07 | 272 07 | 354 20 | 354 20 | 342 72 |
| " " " Ornamental | | | | | | |
| Miscel. Equip. and Con. Exp. | 229 97 | 185 41 | 185 41 | 132 53 | 132 53 | 544 50 |
| Steam or Hydraulic Plant. | | | | | | |
| Old Plant | | 2,651 15 | 2,651 15 | | | |
| Total Plant | 6,204 16 | 8,678 69 | 8,815 93 | 8,164 72 | 8,261 10 | 7,072 08 |
| Bank and Cash Balance | 534 57 | 326 56 | 739 69 | 117 78 | 1,177 47 | 305 89 |
| Inventories | 162 44 | 214 94 | 210 22 | 724 86 | 538 71 | |
| Accounts Receivable | | 73 31 | 74 65 | 354 25 | | 128 00 |
| Sinking Fund | | | | | | |
| Other Assets | | | | | | |
| Total Assets | 6,901 17 | 9,293 50 | 9,840 49 | 9,361 61 | 9,977 28 | 7,505 97 |
| LIABILITIES AND RESERVES | | | | | | |
| Liabilities | | | | | | |
| Debenture Balance | 6,426 65 | 6,323 31 | 6,136 01 | 6,801 40 | 6,693 83 | 6,313 77 |
| Accounts Payable | 140 79 | 2,655 76 | 2,637 36 | 90 00 | 90 00 | 915 11 |
| Bank Overdraft | | | | | | |
| Other Liabilities | | | | | | |
| Total Liabilities | 6,567.44 | 8,979 07 | 8,773 37 | 6,891 40 | 6,783 83 | 7,228 88 |
| Reserves | | | | | | |
| Debentures Paid | | 176 69 | 363 99 | 198 60 | 306 17 | 186 23 |
| Sinking Fund Reserve | | | | | | |
| Depreciation Reserve | 180 00 | | 200 00 | 1,135 00 | 1,460 00 | |
| Surplus | 153 73 | 137 74 | 503 13 | 1,136 61 | 1,427 28 | 90 86 |
| Total Liabilities and Reserves | 6,901 17 | 9,293 50 | 9,840 49 | 9,361 61 | 9,977 28 | 7,505 97 |
| Percentage of Net Debt to Total Assets | 95.2 | 91.5 | 89.2 | 73.6 | 68.9 | 96.4 |

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Embro 483 | | Flesherton 428 | Woodville 388 | | Chatsworth 374 | Baden k | |
|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1916 | 1915 | 1916 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | ..... | ..... | ..... | ..... | 65 00 | 660 64 | 660 64 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 5,298 84 | 5,415 37 | 3,910 09 | 1,397 49 | 1,597 02 | 3,502 90 | 3,869 75 | 3,997 98 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 480 79 | 657 79 | 206 83 | 550 50 | 700 96 | 546 92 | 1,035 14 | 1,285 14 |
| 811 24 | 902 16 | 482 48 | 543 43 | 765 20 | 418 03 | 786 78 | 877 53 |
| 209 29 | 209 29 | 384 61 | 91 57 | 95 67 | 207 29 | 370 02 | 370 02 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 249 84 | 249 84 | 814 11 | 88 96 | 88 96 | 283 12 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 426 25 | 426 25 | ..... | 2,250 00 | 2,250 00 | ..... | ..... | ..... |
| 7,476 25 | 7,860 70 | 5,798 12 | 4,921 95 | 5,497 81 | 5,023 26 | 6,722 33 | 7,191 31 |
| 223 80 | 489 68 | 1,705 24 | ..... | 149 35 | ..... | 1,984 76 | 2,128 12 |
| ..... | ..... | 433 80 | 648 75 | 315 16 | ..... | ..... | ..... |
| ..... | 57 96 | 54 23 | ..... | 35 65 | 150 00 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | 175 00 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 7,700 05 | 8,408 34 | 7,991 39 | 5,570 70 | 5,997 97 | 5,348 26 | 8,707 09 | 9,319 43 |
| ..... | ..... | 5,417 22 | 3,944 36 | 3,885 65 | 4,000 00 | 4,672 31 | 4,581 66 |
| ..... | 7,520 95 | 2,097 41 | 1,527 79 | 1,997 97 | 892 33 | 740 69 | 586 67 |
| 7,399 78 | ..... | ..... | 42 91 | ..... | 200 57 | ..... | ..... |
| 4 95 | ..... | ..... | ..... | ..... | ..... | ..... | 2 79 |
| 7,404 73 | 7,520 95 | 7,514 63 | 5,515 06 | 5,883 62 | 5,092 90 | 5,413 00 | 5,171 12 |
| ..... | 94 82 | 82 78 | 55 64 | 114 35 | ..... | 327 69 | 418 34 |
| ..... | ..... | ..... | ..... | ..... | 175 00 | ..... | ..... |
| 250 00 | 485 00 | 150 00 | ..... | ..... | ..... | 857 00 | 1,132 00 |
| 45 32 | 307 57 | 243 98 | ..... | ..... | 80 36 | 2,109 40 | 2,597 97 |
| 7,700 05 | 8,408 34 | 7,991 39 | 5,570 70 | 5,997 97 | 5,348 26 | 8,707 09 | 9,319 43 |
| 96.0 | 89.4 | 94.1 | ..... | 98.0 | 95.2 | 62.2 | 55.7 |

"k" Population figures not published by the Department of Agriculture.

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

| Municipality<br>Population | Brechin<br>k | | Beachville<br>k | | Burford<br>k | |
|---|---|---|---|---|---|---|
| —— | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | ..... | ..... | 161 03 | 161 03 | 202 00 | 202 00 |
| Sub-Station Equipment | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist System, Overhead | 1,330 29 | 1,330 29 | 6,376 73 | 6,310 36 | 3,119 31 | 3,470 99 |
| " " Underground. | ..... | ..... | ..... | ..... | ..... | ..... |
| Line Transformers | 366 43 | 366 43 | 810 45 | 1,736 69 | 868 50 | 983 23 |
| Meters | 315 62 | 315 62 | 807 66 | 873 72 | 401 42 | 879 88 |
| Street Light Equip., Regular | 69 89 | 69 89 | 237 03 | 237 03 | 147 40 | 147 40 |
| " " " Ornamental | ..... | ..... | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Con. Exp. | 215 77 | 215 77 | 540 36 | 540 36 | 654 70 | 659 20 |
| Steam or Hydraulic Plant. | ..... | ..... | ..... | ..... | ..... | ..... |
| Old Plant | ..... | ..... | ..... | ..... | ..... | ..... |
| Total Plant | 2,298 00 | 2,298 00 | 8,933 26 | 9,859 19 | 5,393 33 | 6,342 70 |
| Bank and Cash Balance | 296 45 | 693 89 | 764 67 | 360 90 | ..... | 248 36 |
| Inventories | ..... | ..... | 250 00 | 42 24 | ..... | ..... |
| Accounts Receivable | 9 75 | 45 91 | 580 00 | 1,176 02 | ..... | ..... |
| Sinking Fund | ..... | ..... | ..... | ..... | ..... | ..... |
| Other Assets | ..... | ..... | ..... | ..... | b *46.63* | ..... |
| Total Assets | 2,604 20 | 3,037 80 | 10,527 93 | 11,438 35 | 5,439 96 | 6,591 06 |
| LIABILITIES AND RESERVES<br>Liabilities | | | | | | |
| Debenture Balance | 1,750 00 | 1,713 66 | 5,013 93 | 4,904 99 | 4,848 79 | 4,690 01 |
| Accounts Payable | 1,854 20 | 1,287 80 | 77 97 | 679 50 | 280 46 | 1,300 45 |
| Bank Overdraft | ..... | ..... | ..... | ..... | 104 60 | ..... |
| Other Liabilities | ..... | ..... | ..... | ..... | 54 90 | ..... |
| Total Liabilities | 2,604 20 | 3,001 46 | 5,091 70 | 5,584 49 | 5,288 75 | 5,990 46 |
| Reserves | | | | | | |
| Debentures Paid | ..... | 36 34 | 346 07 | 455 01 | 151 21 | 309 99 |
| Sinking Fund Reserve | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Reserve | ..... | ..... | 1,345 00 | 1,720 00 | ..... | 165 00 |
| Surplus | ..... | ..... | 3,744 96 | 3,678 85 | ..... | 125 61 |
| Total Liabilities and Reserves | 2,604 20 | 3,037 80 | 10,527 93 | 11,438 35 | 5,439 96 | 6,591 06 |
| Percentage of Net Debt to Total Assets | ..... | ..... | 49.1 | 40.1 | 97.4 | 90.9 |

" b " Operating loss shown in italics.

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Comber k | | Drumbo k | | Delaware k | | Dorchester k | | Elmvale k | |
|---|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 106 25 | 106 25 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3,328 22 | 3,622 99 | 60 58 | 2,582 58 | 2,020 90 | 2,101 21 | 2,531 45 | 2,889 39 | 5,687 64 | 5,799 59 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 420 25 | 420 25 | ..... | 316 55 | 216 75 | 216 75 | 694 32 | 694 32 | 755 41 | 755 41 |
| 487 13 | 631 13 | 18 60 | 614 51 | 316 06 | 316 06 | 641 79 | 659 71 | 1,003 45 | 1,050 50 |
| 199 55 | 199 55 | ..... | 129 89 | 89 76 | 106 93 | 183 13 | 212 34 | 317 98 | 317 98 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 929 11 | 929 11 | ..... | 201 16 | 227 81 | 227 81 | 267 41 | 326 54 | 455 93 | 455 93 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 3,675 29 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 5,364 26 | 5,803 03 | 3,754 47 | 3,844 69 | 2,871 28 | 2,968 76 | 4,318 00 | 4,782 30 | 8,326 66 | 8,485 66 |
| 24 73 | 114 66 | 819 43 | 926 68 | 1,235 11 | 262 71 | 443 20 | 206 94 | ..... | 154 40 |
| ..... | ..... | 6 35 | 63 41 | ..... | ..... | ..... | ..... | 251 86 | 548 55 |
| ..... | ..... | ..... | ..... | ..... | 985 64 | ..... | 430 10 | 95 11 | 140 11 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 5,388 99 | 5,917 69 | 4,580 25 | 4,834 78 | 4,106 39 | 4,217 11 | 4,761 30 | 5,419 34 | 8,673 63 | 9,328 72 |
| 4,363 91 | 4,221 02 | 4,432 27 | 4,361 15 | 4,000 00 | 3,939 79 | 4,300 00 | 4,235 28 | 6,667 85 | 6,545 88 |
| 831 71 | 1,217 33 | ..... | 42 77 | ..... | 42 29 | ..... | ..... | 169 22 | 150 00 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 192 46 | ..... |
| 48 47 | ..... | ..... | ..... | 24 00 | 24 00 | ..... | ..... | ..... | ..... |
| 5,244 09 | 5,438 35 | 4,432 27 | 4,403 92 | 4,024 00 | 4,006 08 | 4,300 00 | 4,235 28 | 7,029 53 | 6,695 88 |
| 136 09 | 278 98 | 67 73 | 138 89 | ..... | 60 21 | ..... | 64 72 | 332 15 | 454 12 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 145 00 | ..... | 110 00 | ..... | 80 00 | 200 00 | 350 00 | 735 00 | 1,025 00 |
| 8 81 | 55 30 | 80 25 | 182 01 | 82 39 | 70 82 | 261 30 | 769 34 | 576 95 | 1,153 72 |
| 5,388 99 | 5,917 69 | 4,580 25 | 4,834 78 | 4,106 39 | 4,217 11 | 4,761 30 | 5,419 34 | 8,673 63 | 9,328 72 |
| 97.6 | 91.9 | 96.8 | 91.1 | 98.0 | 95.0 | 89.5 | 78.1 | 81.0 | 71.8 |

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

| Municipality<br>Population | Granton<br>k | Grantham Township | Holstein<br>k | Lambeth<br>k | |
|---|---|---|---|---|---|
| —— | 1916 | 1916 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | ..... | ..... | ..... | ..... | ..... |
| Sub-Station Equipment | ..... | ..... | ..... | ..... | ..... |
| Distribution System, Overhead | 2,671 73 | 2,190 60 | 1,649 25 | 2,503 51 | 2,606,19 |
| " " Underground | ..... | ..... | ..... | ..... | ..... |
| Line Transformers | 221 22 | 1,005 62 | 305 33 | 621 01 | 621 01 |
| Meters | 445 47 | 626 06 | 192 42 | 639 78 | 639 78 |
| Street Light Equipment, Regular | 149 27 | ..... | 141 25 | 134 37 | 169 37 |
| " " Ornamental | ..... | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 110 28 | 78 19 | 164 71 | 312 68 | 204 73 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... | ..... |
| Old Plant | ..... | ..... | ..... | ..... | ..... |
| Total Plant | 3,597 97 | 3,900 47 | 2,452 96 | 4,211 35 | 4,241 08 |
| Bank and Cash Balance | 262 28 | 3,195 78 | 142 49 | 1,184 06 | 107 07 |
| Inventories | ..... | ..... | 83 71 | ..... | ..... |
| Accounts Receivable | ..... | ..... | 51 16 | 102 03 | 63.10 |
| Sinking Fund | ..... | 279 12 | ..... | ..... | ..... |
| Other Assets | ..... | b *1,581 49* | b *57 73* | b *218 54* | ..... |
| Total Assets | 3.860 25 | 8,956 86 | 2,788 05 | 5,715 98 | 4,411 25 |
| LIABILITIES AND RESERVES | | | | | |
| Liabilities | | | | | |
| Debenture Balance | 3,455 73 | 7,500 00 | 2,676 01 | ..... | 3,939 79 |
| Accounts Payable | 254 27 | 1,177,74 | 26 00 | 5,715 98 | 98 47 |
| Bank Overdraft | ..... | ..... | ..... | ..... | ..... |
| Other Liabilities | ..... | ..... | ..... | ..... | ..... |
| Total Liabilities | 3,710 00 | 8,677 74 | 2,702 01 | 5,715 98 | 4,038 26 |
| Reserves | | | | | |
| Debentures Paid | 44 27 | 279 12 | 86 04 | ..... | 60 21 |
| Sinking Fund Reserve | ..... | ..... | ..... | ..... | ..... |
| Depreciation Reserve | ..... | ..... | ..... | ..... | 100 00 |
| Surplus | 105 98 | ..... | ..... | ..... | 212 78 |
| Total Liabilities and Reserves | 3,860 25 | 8,956 86 | 2,788 05 | 5,715 98 | 4,411 25 |
| Percentage of Net Debt to Total Assets | 96.1 | ..... | 100.0 | 100.0 | 91.5 |

"b" Operating loss shown in italics.

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| Lynden k | | Mount Brydges k | | Plattsville k | | Otterville k | Princeton k | |
|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 100 00 | 241 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,297 50 | 2,489 73 | 2,646 79 | 2,650 77 | 2,478 44 | 2,482 86 | 2,546 60 | 1,671 68 | 1,910 44 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 336 18 | 942 37 | 609 50 | 673 25 | 662 94 | 1,270 58 | 479 75 | 297 70 | 680 74 |
| 344 06 | 424 91 | 668 71 | 691 83 | 862 36 | 891 11 | 473 40 | 342 96 | 479 00 |
| 137 90 | 137 90 | 120 09 | 120 09 | 133 65 | 133 65 | 193 37 | 116 30 | 116 30 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 144 37 | 200 32 | 143 82 | 143 82 | 504 42 | 504 42 | 142 00 | 27 85 | 32 85 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3,360 01 | 4,436 41 | 4,188 91 | 4,279 76 | 4,641 81 | 5,282 62 | 3,835 12 | 2,456 49 | 3,219 33 |
| 1,934 64 | 213 24 | 1 19 | 743 06 | 367 22 | 221 66 | 163 69 | 1,163 08 | 908 69 |
| ..... | ..... | 20 05 | 20 00 | 12 96 | 11 24 | 59 50 | ..... | ..... |
| 67 50 | 304 57 | 171 09 | 52 88 | 372 60 | 715 27 | 516 30 | ..... | 5 72 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | b *129 13* | ..... | ..... | ..... | ..... | ..... | b *18 33* |
| 5,362 15 | 4,954 22 | 4,510 37 | 5,095 70 | 5,394 59 | 6,228 79 | 4,574 61 | 3,619 57 | 4,152 07 |
| 4,495 00 | 4,432 95 | 4,161 73 | 4,100 27 | 5,158 18 | 5,075 41 | 4,377 67 | 3,496 57 | 3,440 46 |
| 766 66 | 220 00 | 290 37 | 672 69 | 19 14 | 217 19 | 60 00 | ..... | 506 07 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 5,261 66 | 4,652 95 | 4,452 10 | 4,772 96 | 5,177 32 | 5,292 60 | 4,437 67 | 3,496 57 | 3,946 53 |
| ..... | 62 05 | 58 27 | 119 73 | 78 82 | 161 59 | 122 33 | 53 43 | 109 54 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 120 00 | ..... | 125 00 | ..... | 145 00 | ..... | ..... | 96 00 |
| 100 49 | 119 22 | ..... | 78 01 | 138 45 | 629 60 | 14 61 | 69 57 | ..... |
| 5,362 15 | 4,954 22 | 4,510 37 | 5,095 70 | 5,394 59 | 6,228 79 | 4,574 61 | 3,619 57 | 4,152 07 |
| 98.1 | 93.9 | 98.5 | 93.7 | 96.1 | 85.0 | 97.0 | 96.5 | ..... |

"b" Operating loss shown in italics.

## STATEMENT

### Comparative Condensed Balance Sheets of Electric Departments

| Municipality<br>Population | Pt. McNicoll<br>k | | Rockwood<br>k | | Sunderland<br>k | |
|---|---|---|---|---|---|---|
| —— | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | 202 60 | 202 60 | 79 00 | 79 00 | ..... | ..... |
| Sub-Station Equipment | ..... | ..... | ..... | ..... | ..... | ..... |
| Distribution System, Overhead | 3,156 54 | 3,259 63 | 3,866 93 | 4,150 53 | 2,731 81 | 2,826 66 |
| " " Underground | ..... | ..... | ..... | ..... | ..... | ..... |
| Line Transformers | 250 35 | 305 60 | 972 93 | 1,211 93 | 470 00 | 731 75 |
| Meters | 593 61 | 714 81 | 781 60 | 979 45 | 639 40 | 788 68 |
| Street Light Equipment, Regular | 103 40 | 103 40 | 254 58 | 257 50 | 190 82 | 190 82 |
| " " Ornamental | ..... | ..... | ..... | ..... | ..... | ..... |
| Miscel. Equip. and Construction Exp. | 396 44 | 396 44 | 277 01 | 308 05 | 147 22 | 147 22 |
| Steam or Hydraulic Plant | ..... | ..... | ..... | ..... | ..... | ..... |
| Old Plant | ..... | ..... | ..... | ..... | 2,030 00 | 2,030 00 |
| Total Plant | 4,502 94 | 4,982 48 | 6,232 05 | 6,986 46 | 6,209 25 | 6,715 13 |
| Bank and Cash Balance | 127 27 | ..... | ..... | ..... | ..... | ..... |
| Inventories | 59 86 | 57 86 | 80 56 | 73 45 | 148 27 | 94 93 |
| Accounts Receivable | 129 12 | ..... | ..... | ..... | 607 85 | 720 44 |
| Sinking Fund | ..... | ..... | ..... | ..... | ..... | ..... |
| Other Assets | ..... | b *271 26* | ..... | ..... | ..... | ..... |
| Total Assets | 4,819 19 | 5,311 60 | 6,312 61 | 7,059 91 | 6,965 37 | 7,530 50 |
| LIABILITIES AND RESERVES | | | | | | |
| Liabilities | | | | | | |
| Debenture Balance | 4,769 07 | 4,377 67 | 1,427 82 | 1,217 71 | 5,635 45 | 5,546 32 |
| Accounts Payable | ..... | 56 29 | ..... | ..... | 320 00 | ..... |
| Bank Overdraft | ..... | 625 31 | 2,118 28 | 1,796 60 | 845 37 | 1,730 50 |
| Other Liabilities | ..... | ..... | ..... | ..... | ..... | ..... |
| Total Liabilities | 4,769 07 | 5,059 27 | 3,546 10 | 3,014 31 | 6,800 82 | 7,276 82 |
| Reserves | | | | | | |
| Debentures Paid | ..... | 122 33 | 572 18 | 782 29 | 164 55 | 253 68 |
| Sinking Fund Reserve | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Reserve | ..... | 130 00 | 575 00 | 815 00 | ..... | ..... |
| Surplus | 50 12 | ..... | 1,618 33 | 2,448 31 | ..... | ..... |
| Total Liabilities and Reserves | 4,819 19 | 5,311 60 | 6,312 61 | 7,059 91 | 6,965 37 | 7,530 50 |
| Percentage of Net Debt to Total Assets | 99.0 | ..... | 56.2 | 42.7 | 100 | ..... |

"k" Population, under 500.
"b" Operating loss shown in italics.

"A"—Continued

of Hydro Municipalities as at December 31st, 1915 and 1916

| St. George k | | Stamford Tp. | Thorndale k | | Thamesford k | | Toronto Township | |
|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,759 81 | 2,838 77 | ..... | 1,863 71 | 1,893 29 | 2,955 44 | 3,490 27 | 1,555 50 | 7,204 65 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 851 31 | 851 31 | ..... | 381 71 | 381 71 | 937 05 | 953 88 | 214 91 | 5,309 85 |
| 739 43 | 868 73 | ..... | 466 53 | 534 23 | 918 91 | 1,017 56 | 355 15 | 2,908 68 |
| 218 11 | 218 11 | ..... | 59 40 | 59 40 | 176 85 | 176 85 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 374 18 | 374 18 | ..... | 273 95 | 273 95 | 260 05 | 158 25 | ..... | 258 16 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 29,671 12 | ..... | ..... | ..... | ..... | ..... | ..... |
| 4,942 84 | 5,151 10 | 29,671 12 | 3,045 30 | 3,142 58 | 5,248 30 | 5,796 81 | 2,125 66 | 15,681 34 |
| 593 44 | 1,959 09 | ..... | 61 50 | 77 73 | 246 10 | 186 96 | 1,910 90 | 2,828 86 |
| 87 69 | 22 61 | ..... | 13 76 | 45 39 | ..... | 20 00 | ..... | ..... |
| 814 32 | ..... | 1,070 48 | 294 00 | 131 00 | ..... | 113 01 | 914 56 | 914 56 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6,438 29 | 7,132 80 | 30,741 60 | 3,414 56 | 3,396 70 | 5,494 40 | 6,116 78 | 4,951 02 | 19,424 76 |
| 5,917 17 | 5,829 78 | ..... | 2,500 00 | 2,462 37 | 2,975 73 | 2,923 08 | ..... | 11,673 78 |
| 229 55 | 330 33 | 29,381 21 | 222 30 | 688 68 | 1,281 81 | 1,686 75 | 1,314 54 | 1,349 56 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | 7 62 | ..... | ..... | ..... |
| 6,146 72 | 6,160 11 | 29,381 21 | 2,722 30 | 3,151 05 | 4,265 16 | 4,609 83 | 1,314 54 | 13,023 34 |
| 82 83 | 170 22 | ..... | ..... | 37 63 | 82 27 | 134 92 | ..... | 326 22 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 150 00 | ..... | 265 00 | 100 66 | 500 00 | 735 00 | 1,800 00 | 3,734 00 |
| 208 74 | 652 47 | 1,360 39 | 427 26 | 107 36 | 646 97 | 637 03 | 1,836 48 | 2,341 20 |
| 6,438 29 | 7,132 80 | 30,741 60 | 3,414 56 | 3,396 70 | 5,494 40 | 6,116 78 | 4,951 02 | 19,424 76 |
| 95.6 | 86.3 | ..... | 79.8 | 92.8 | 77.6 | 75.3 | 26.6 | 67.1 |

"k" Population, under 500.

## STATEMENT "A"—Concluded.

### Comparative Condensed Balance Sheets of Electric Departments of Hydro Municipalities as at December 31st, 1915 and 1916

| Municipality<br>Population | Williamsburg<br>k | | Waubaushene<br>k | |
|---|---|---|---|---|
| —— | 1915 | 1916 | 1915 | 1916 |
| ASSETS | $ c. | $ c. | $ c. | $ c. |
| Lands and Buildings | | | | |
| Sub-Station Equipment | | | | |
| Distribution System, Overhead | 1,478 83 | 1,478 83 | 2,637 80 | 2,755 95 |
| " " Underground | | | | |
| Line Transformers | 297 89 | 297 89 | 239 66 | 239 66 |
| Meters | 427 57 | 427 57 | 532 86 | 664 13 |
| Street Light Equipment, Regular | 66 16 | 66 16 | 142 22 | 142 22 |
| " " Ornamental | | | | |
| Miscel. Equip. and Construction Exp. | 4 00 | 4 00 | 257 66 | 257 66 |
| Steam or Hydraulic Plant | | | | |
| Oid Plant | | | | |
| Total Plant | 2,274 45 | 2,274 45 | 3,810 20 | 4,059 62 |
| Bank and Cash Balance | 636 27 | 827 76 | 365 41 | 3 00 |
| Inventories | 168 91 | 121 70 | 62 23 | 3 28 |
| Accounts Receivable | | | 99 64 | 387 90 |
| Sinking Fund | | | | |
| Other Assets | | | | |
| Total Assets | 3,079 63 | 3,223 91 | 4,337 48 | 4,453 80 |
| LIABILITIES AND RESERVES | | | | |
| Liabilities | | | | |
| Debenture Balance | 2,666 83 | 2,579 50 | | 3,891 26 |
| Accounts Payable | 52 39 | 41 75 | 4,164 57 | 49 00 |
| Bank Overdraft | 220 67 | | | |
| Other Liabilities | | | | |
| Total Liabilities | 2,939 89 | 2,621 25 | 4,164 57 | 3,940 26 |
| Reserves | | | | |
| Debentures Paid | 83 17 | 170 50 | | 108 74 |
| Sinking Fund Reserve | | | | |
| Depreciation Reserve | | 70 00 | | 115 00 |
| Surplus | 56 57 | 362 16 | 172 91 | 289 80 |
| Total Liabilities and Reserves | 3,079 63 | 3,223 91 | 4,337 48 | 4,453 80 |
| Percentage of Net Debt to Total Assets | 95.5 | 81.3 | 96.0 | 86.5 |

# CONDENSED
# REVENUE AND EXPENSE
OR
# OPERATING REPORT
FOR
# 1916

## STATE

### Report Showing Operation of Municipalities

| Municipality | Months Covered by Report | Population | Plant Cost | Debenture Debt and Overdraft | Operation and Maintenance | Fixed Charges | Total Operation |
|---|---|---|---|---|---|---|---|
| | | | $ c. | $ c. | $ c. | $ c. | $ c. |
| Toronto | 12 | 463,705 | 7,501,186 77 | 6,097,731 80 | 1,063,778 95 | 400,434 57 | 1,464,213 52 |
| Hamilton | 12 | 100,461 | 1,084,192 15 | 825,104 45 | 197,843 10 | 61,266 73 | 259,109 83 |
| Ottawa | 12 | 100,163 | 913,252 04 | 498,125 63 | 141,041 02 | 42,371 44 | 183,412 46 |
| London | 12 | 58,055 | 825,359 68 | 499,771 80 | 230,230 75 | 40,099 60 | 270,330 35 |
| Brantford | 12 | 25,420 | 274,678 49 | 218,469 56 | 46,734 70 | 17,221 00 | 63,955 70 |
| Windsor | 12 | 24,162 | 438,380 97 | 416,545 31 | 76,682 19 | 17,258 16 | 93,940 35 |
| Peterborough | 12 | 20,426 | 228,661 07 | 189,870 42 | 79,050 39 | 11,981 33 | 91,031 72 |
| Kitchener | 12 | 19,266 | 365,755 80 | 207,182 62 | 80,063 85 | 18,474 43 | 98,538 28 |
| St. Catharines | 12 | 17,880 | 232,718 53 | 194,213 57 | 45,479 47 | 12,411 67 | 57,891 14 |
| St. Thomas | 12 | 17,174 | 211,286 07 | 85,080 79 | 64,559 75 | 8,314 07 | 72,873 82 |
| Stratford | 12 | 17,081 | 226,136 69 | 146,416 10 | 48,533 08 | 14,794 02 | 63,327 10 |
| Guelph | 12 | 16,735 | 239,506 30 | 75,010 81 | 62,184 49 | 10,273 28 | 72,457 77 |
| Port Arthur | 12 | 14,307 | 675,641 74 | 388,735 82 | 80,232 38 | 47,428 64 | 127,661 02 |
| Chatham | 12 | 12,863 | 163,232 27 | 161,006 98 | 25,457 35 | 8,855 45 | 34,312 80 |
| Owen Sound | 12 | 11,910 | 153,967 25 | 63,165 87 | 41,889 31 | 11,281 56 | 53,170 87 |
| Galt | 12 | 11,852 | 277,118 00 | 189,098 94 | 55,209 42 | 15,303 85 | 70,513 27 |
| Sarnia | 6 | 11,676 | 223,571 71 | 209,383 87 | 14,954 32 | 7,738 92 | 22,693 24 |
| Niagara Falls | 12 | 11,147 | 182,052 18 | 102,549 60 | 34,161 50 | 9,078 40 | 43,239 90 |
| Woodstock | 12 | 10,084 | 154,439 06 | 41,767 41 | 36,312 92 | 7,241 71 | 43,554 63 |
| Brockville | 12 | 9,428 | 154,946 87 | 105,534 62 | 34,907 77 | 15,535 74 | 50,443 51 |
| Welland | 12 | 7,243 | 101,388 09 | 77,398 44 | 72,489 20 | 8,199 77 | 80,688 97 |
| Barrie | 12 | 6,453 | 108,970 43 | 26,395 66 | 20,687 73 | 6,052 29 | 26,740 02 |
| Collingwood | 12 | 6,361 | 64,088 83 | 17,585 96 | 28,701 65 | 3,393 33 | 32,094 98 |
| Midland | 12 | 6,258 | 84,568 48 | 23,868 27 | 16,812 34 | 3,955 47 | 20,767 81 |
| Ingersoll | 12 | 5,176 | 102,608 86 | 64,501 35 | 25,594 07 | 4,905 00 | 30,499 07 |
| Walkerville | 12 | 5,096 | 183,321 12 | 159,865 92 | 91,766 04 | 11,092 60 | 102,858 64 |
| Waterloo | 12 | 4,956 | 101,980 86 | 55,501 37 | 25,664 44 | 3,475 25 | 29,139 69 |
| Goderich | 12 | 4,655 | 85,346 21 | 45,122 64 | 13,593 88 | 5,302 27 | 18,896 15 |
| Dundas | 12 | 4,652 | 80,108 49 | 59,719 89 | 13,103 58 | 5,565 39 | 18,668 97 |
| Preston | 12 | 4,643 | 111,640 19 | 73,898 91 | 26,900 28 | 7,258 79 | 34,159 07 |
| Paris | 12 | 4,370 | 84,232 04 | 50,314 61 | 11,881 72 | 6,665 00 | 18,546 72 |
| Wallaceburg | 12 | 4,107 | 62,517 34 | 60,039 21 | 13,811 43 | 3,701 50 | 17,512 93 |
| Simcoe | 12 | 4,061 | 35,735 36 | 33,702 58 | 4,819 71 | 1,948 91 | 6,768 62 |
| Brampton | 12 | 4,041 | 84,151 79 | 55,467 47 | 18,526 63 | 4,739 19 | 23,265 82 |
| St. Marys | 12 | 3,958 | 82,069 48 | 38,344 12 | 14,585 97 | 4,775 42 | 19,361 39 |
| Penetang | 12 | 3,928 | 45,290 12 | 24,555 92 | 14,859 07 | 2,050 40 | 16,909 47 |
| Petrolea | 7 | 3,891 | 42,552 34 | 41,998 31 | 4,508 25 | 1,486 24 | 5,994 49 |
| Tillsonburg | 12 | 3,084 | 39,034 81 | 22,008 49 | 11,762 50 | 2,594 83 | 14,357 33 |
| Strathroy | 12 | 2,998 | 45,023 00 | 37,109 15 | 9,669 31 | 2,188 26 | 11,857 57 |
| Hespeler | 12 | 2,740 | 32,746 48 | 21,665 34 | 13,039 33 | 3,144 34 | 16,183 67 |
| Prescott | 12 | 2,740 | 54,710 75 | 20,359 26 | 10,492 35 | 1,983 39 | 12,475 74 |
| Orangeville | 5 | 2,493 | 28,123 02 | 27,878 34 | 2,233 77 | 610 88 | 2,844 65 |
| Listowel | 12 | 2,326 | 31,249 78 | 24,390 16 | 7,126 50 | 2,928 48 | 10,054 98 |
| Ridgetown | 12 | 2,326 | 23,702 41 | 16,909 36 | 5,303 48 | 1,840 86 | 7,144 34 |
| Elmira | 12 | 2,270 | 19,810 93 | 12,860 36 | 4,765 69 | 1,377 58 | 6,143 27 |
| Clinton | 12 | 2,177 | 39,421 58 | 34,843 80 | 5,918 41 | 3,089 21 | 9,007 62 |
| Weston | 12 | 2,156 | 36,918 56 | 14,032 73 | 8,740 21 | 2,096 09 | 10,836 30 |
| Milton | 13 | 2,072 | 28,640 86 | 10,336 99 | 11,420 84 | 2,178 67 | 13,599 51 |
| Mimico | 12 | 1,976 | 29,528 43 | 20,093 18 | 6,267 82 | 2,580 10 | 8,847 92 |
| Chesley | 4 | 1,975 | 26,572 60 | 25,333 61 | 1,512 63 | 482 05 | 1,994 68 |
| Seaforth | 12 | 1,964 | 31,464 20 | 18,311 33 | 13,584 03 | 1,695 75 | 15,279 7 8 |
| Mount Forest | 12 | 1,941 | 29,055 35 | 22,369 13 | 4,904 35 | 1,622 33 | 6,526 68 |
| Georgetown | 12 | 1,905 | 30,943 56 | 16,887 27 | 11,442 26 | 1,963 05 | 13,405 31 |
| Palmerston | 12 | 1,843 | 22,950 76 | 12,443 76 | 3,768 68 | 1,840 00 | 5,608 68 |
| Fergus | 12 | 1,776 | 17,767 32 | 13,052 21 | 4,320 60 | 1,148 74 | 5,469 34 |

MENT "B"

for Period ending December 31st, 1916

| Revenue | Surplus | Depreciation | Surplus less Depreciation | Number of Consumers | | | | PerCent. of Consumers to Population | H. P. taken in Dec. 1916 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Domestic | Com'l | Power | Total | | |
| $ c. | $ c. | $ c. | $ c. | | | | | | |
| 1,690,998 42 | 226,784 90 | 208,388 09 | 18,396 81 | 34,347 | 7,406 | 1,707 | 43,460 | † 9.4 | 47,165 |
| 343,330 63 | 84,220 80 | 32,110 54 | 52,110 26 | 12,423 | 1,546 | 464 | 14,433 | † 14.4 | 10,482 |
| 219,480 40 | 36,067 94 | 32,775 00 | 3,292 94 | 7,912 | 1,107 | 188 | 9,207 | † 9.2 | 5,484 |
| 340,791 79 | 70,461 44 | 29,060 62 | 41,400 82 | 8,282 | 1,129 | 295 | 9,706 | † 16.7 | 9,256 |
| 80,042 51 | 16,086 81 | 7,500 00 | 8,586 81 | 2,056 | 334 | 26 | 2,416 | † 9.5 | 2,393 |
| 99,802 51 | 5,862 16 | 5,157 50 | 704 66 | 3,180 | 439 | 66 | 3,685 | † 14.9 | 1,696 |
| 107,279 07 | 16,247 35 | 6,250 00 | 9,997 35 | 3,401 | 602 | 117 | 4,120 | 20.2 | 3,794 |
| 121,686 57 | 23,148 29 | 14,638 25 | 8,510 04 | 2,407 | 543 | 147 | 3,097 | 16.1 | 3,702 |
| 78,814 24 | 20,923 10 | 10,500 00 | 10,423 10 | 2,410 | 247 | 48 | 2,705 | † 15.1 | 3,020 |
| 98,159 08 | 25,285 26 | 9,800 00 | 15,485 26 | 2,241 | 464 | 107 | 2,812 | 16.4 | 2,121 |
| 74,931 86 | 11,604 76 | 7,500 00 | 4,104 76 | 1,993 | 463 | 103 | 2,559 | 14.9 | 1,655 |
| 91,531 67 | 19,073 90 | 10,700 00 | 8,373 90 | 2,033 | 490 | 86 | 2,609 | 15.6 | 3,003 |
| 170,982 98 | 43,321 96 | ..... | 43,321 96 | 2,701 | 481 | 46 | 3,228 | 22.6 | 2,355 |
| 34,914 46 | 601 66 | ..... | 601 66 | 1,171 | 215 | 25 | 1,411 | † 11.0 | 660 |
| 61,201 13 | 8,030 26 | 3,307 80 | 4,722 46 | 1,376 | 435 | 83 | 1,894 | 15.9 | 812 |
| 79,088 61 | 8,575 34 | 8,500 00 | 75 34 | 2,236 | 386 | 79 | 2,701 | 22.8 | 2,673 |
| 33,618 93 | 10,925 69 | ..... | 10,925 69 | 1,888 | 418 | 54 | 2,360 | 20.2 | ..... |
| 57,465 87 | 14,225 97 | 8,315 00 | 5,910 97 | 2,050 | 400 | 80 | 2,530 | 22.7 | 2,543 |
| 56,627 61 | 13,072 98 | 6,930 20 | 6,142 78 | 1,224 | 372 | 72 | 1,668 | 16.5 | 1,185 |
| 59,719 76 | 9,276 25 | 7,000 00 | 2,276 25 | 965 | 312 | 31 | 1,308 | 13.9 | 303 |
| 93,646 11 | 12,957 14 | 4,000 00 | 8,957 14 | 536 | 75 | 24 | 635 | † 8.8 | 5,963 |
| 35,021 86 | 8,281 84 | 2,575 00 | 5,706 84 | 896 | 257 | 18 | 1,171 | 16.6 | 591 |
| 41,627 62 | 9,532 64 | 2,150 00 | 7,382 64 | 714 | 242 | 33 | 989 | 15.5 | 1,064 |
| 27,477 04 | 6,709 23 | 3,100 00 | 3,609 23 | 732 | 184 | 31 | 947 | 15.1 | 824 |
| 38,189 63 | 7,690 56 | 2,650 00 | 5,040 56 | 590 | 206 | 51 | 847 | 16.4 | 882 |
| 112,465 90 | 9,607 26 | 3,773 06 | 5,834 20 | 1,513 | 216 | 75 | 1,804 | * | 1,765 |
| 34,743 81 | 5,604 12 | 3,700 00 | 1,904 12 | 592 | 150 | 50 | 792 | 16.0 | 874 |
| 23,135 42 | 4,239 27 | 2,600 00 | 1,639 27 | 511 | 159 | 9 | 679 | 14.6 | 221 |
| 26,103 55 | 7,434 58 | 2,830 00 | 4,604 58 | 673 | 168 | 35 | 876 | † 18.8 | 612 |
| 37,790 20 | 3,631 13 | 3,500 00 | 131 13 | 785 | 182 | 34 | 1,001 | 21.6 | 1,249 |
| 23,234 18 | 4,687 46 | 2,000 00 | 2,687 46 | 552 | 150 | 4 | 706 | 16.2 | 413 |
| 18,645 63 | 1,132 70 | 1,038 00 | 94 70 | 434 | 154 | 5 | 593 | 14.4 | 312 |
| 8,165 21 | 1,396 59 | 1,350 00 | 46 59 | 57 | 84 | 12 | 153 | 3.8 | 113 |
| 28,128 11 | 4,862 29 | 3,000 00 | 1,862 29 | 722 | 175 | 24 | 921 | 22.8 | 815 |
| 22,838 66 | 3,477 27 | 2,900 00 | 577 27 | 563 | 161 | 28 | 752 | 18.8 | 489 |
| 18,783 84 | 1,874 37 | 1,780 00 | 94 37 | 189 | 95 | 16 | 300 | 7.7 | 460 |
| 6,065 32 | 70 83 | ..... | 70 83 | 257 | 155 | 14 | 426 | 10.9 | 224 |
| 17,227 88 | 2,870 55 | 1,600 00 | 1,270 55 | 375 | 158 | 17 | 550 | 17.8 | 249 |
| 15,086 66 | 3,229 09 | 1,050 00 | 2,179 09 | 314 | 152 | 8 | 474 | 15.8 | 231 |
| 18,033 52 | 1,849 85 | 1,075 00 | 774 85 | 277 | 84 | 12 | 383 | 14.0 | 651 |
| 14,558 20 | 2,082 46 | 1,880 00 | 202 46 | 380 | 133 | 12 | 525 | 19.2 | 243 |
| 3,089 33 | 244 68 | ..... | 244 68 | 120 | 77 | 4 | 201 | 8.1 | 185 |
| 10,464 38 | 409 40 | ..... | 409 40 | 225 | 117 | 7 | 349 | 15.0 | 177 |
| 8,999 72 | 1,855 38 | 425 00 | 1,430 38 | 174 | 101 | 3 | 278 | 12.0 | 88 |
| 8,270 31 | 2,127 04 | 620 00 | 1,507 04 | 233 | 93 | 12 | 338 | 14.9 | 125 |
| 10,647 91 | 1,640 29 | 1,200 00 | 440 29 | 211 | 112 | 7 | 330 | 15.2 | 138 |
| 15,797 35 | 4,961 05 | 1,600 00 | 3,361 05 | 475 | 88 | 11 | 574 | 26.6 | 267 |
| 16,815 90 | 3,216 39 | 900 00 | 2,316 39 | 197 | 84 | 6 | 287 | 13.9 | 361 |
| 11,515 64 | 2,667 72 | 1,000 00 | 1,667 72 | 621 | 31 | 8 | 660 | * | 186 |
| 2,588 38 | 593 70 | ..... | 593 70 | 157 | 70 | 4 | 231 | 11.7 | 100 |
| 17,629 14 | 2,349 36 | 1,225 00 | 1,124 36 | 280 | 110 | 12 | 402 | 20.5 | 472 |
| 8,613 58 | 2,086 90 | 615 00 | 1,471 90 | 164 | 106 | 2 | 272 | ..... | 111 |
| 18,095 44 | 4,690 13 | 1,210 00 | 3,480 13 | 306 | 99 | 21 | 426 | 22.3 | 295 |
| 7,927 15 | 2,318 47 | 295 00 | 2,023 47 | 151 | 63 | 1 | 215 | 11.7 | 91 |
| 8,217 95 | 2,748 61 | 500 00 | 2,248 61 | 149 | 92 | 7 | 248 | 14.0 | 114 |

## STATEMENT

### Report Showing Operation of Municipalities

| Municipality | Months Covered by Report | Population | Plant Cost | Debenture Debt and Overdraft | Operation and Maintenance | Fixed Charges | Total Operation |
|---|---|---|---|---|---|---|---|
| | | | $ c. | $ c. | $ c. | $ c. | $ c. |
| Tilbury | 12 | 1,740 | 14,171 78 | 13,185 17 | 3,356 62 | 864 00 | 4,220 62 |
| Acton | 12 | 1,735 | 16,981 17 | 6,273 04 | 3,675 50 | 1,101 41 | 4,776 91 |
| Gravenhurst | 12 | 1,702 | 54,955 63 | 32,665 11 | 5,930 06 | 3,483 41 | 9,413 47 |
| Mitchell | 12 | 1,687 | 28,455 43 | 8,025 13 | 7,210 74 | 1,808 33 | 9,019 07 |
| Durham | 12 | 1,600 | 18,079 97 | 17,829 99 | 2,470 18 | 1,277 28 | 3,747 46 |
| Exeter | 6 | 1,572 | 17,636 81 | 16,680 97 | 2,089 74 | 665 47 | 2,755 21 |
| New Hamburg | 12 | 1,543 | 24,894 73 | 10,723 41 | 4,573 25 | 1,170 92 | 5,744 17 |
| Dresden | 12 | 1,521 | 17,583 12 | 16,349 58 | 4,110 62 | 1,492 65 | 5,603 27 |
| Vict. Harbor | 12 | 1,477 | 7,252 78 | 6,104 85 | 1,218 11 | 497 96 | 1,716 07 |
| Blenheim | 13 | 1,424 | 16,736 93 | 14,572 84 | 4,271 82 | 897 08 | 5,168 90 |
| Harriston | 12 | 1,404 | 14,029 79 | 13,242 00 | 3,278 64 | 992 61 | 4,271 25 |
| Pt. Dalhousie | 12 | 1,318 | 17,535 74 | 15,774 09 | 3,659 39 | 1,264 89 | 4,924 28 |
| Caledonia | 12 | 1,217 | 7,309 75 | 4,121 25 | 1,114 15 | 361 72 | 1,475 87 |
| Norwich | 12 | 1,189 | 18,473 99 | 9,897 65 | 7,703 17 | 2,452 31 | 10,155 48 |
| New Toronto | 12 | 1,186 | 17,962 53 | 11,899 06 | 7,536 87 | 922 31 | 8,459 18 |
| Waterford | 12 | 1,133 | 9,947 19 | 7,751 30 | 2,549 61 | 1,366 37 | 3,915 98 |
| Shelburne | 5 | 1,115 | 17,297 71 | 16,290 76 | 888 83 | 34 33 | 923 16 |
| Elora | 12 | 1,115 | 13,668 03 | 11,154 74 | 2,961 90 | 875 17 | 3,837 07 |
| Hagersville | 12 | 1,105 | 10,440 64 | 4,693 98 | 3,976 97 | 550 80 | 4,527 77 |
| Winchester | 12 | 1,065 | 11,391 52 | 7,659 28 | 3,243 31 | 773 70 | 4,017 01 |
| Pt. Credit | 12 | 1,046 | 12,603 53 | 7,276 90 | 2,190 80 | 568 95 | 2,759 75 |
| Beaverton | 12 | 1,015 | 13,842 13 | 13,367 64 | 2,996 11 | 855 20 | 3,851 31 |
| Markdale | 9 | 989 | 11,136 88 | 9,820 02 | 1,451 13 | 657 86 | 2,108 99 |
| Stayner | 12 | 972 | 15,284 16 | 12,610 00 | 3,238 41 | 753 16 | 3,991 57 |
| Cannington | 12 | 903 | 13,552 32 | 13,211 90 | 3,089 79 | 898 52 | 3,988 31 |
| Milverton | 7 | 893 | 7,695 81 | 7,389 59 | 640 35 | 690 86 | 1,331 21 |
| Dutton | 12 | 870 | 8,201 05 | 6,561 62 | 2,110 32 | 476 04 | 2,586 36 |
| Pt. Stanley | 12 | 849 | 21,533 77 | 11,577 75 | 5,981 83 | 1,232 82 | 7,214 65 |
| Chesterville | 12 | 854 | 7,902 78 | 6,718 30 | 2,498 91 | 435 34 | 2,934 25 |
| Ayr | 12 | 800 | 12,854 58 | 10,973 77 | 1,782 59 | 1,076 82 | 2,859 41 |
| Waterdown | 12 | 785 | 10,715 49 | 5,270 99 | 2,791 53 | 1,482 95 | 4,274 48 |
| Thamesville | 12 | 769 | 11,479 40 | 10,093 68 | 2,157 76 | 740 65 | 2,898 41 |
| Bolton | 12 | 727 | 13,182 77 | 11,347 01 | 4,518 83 | 866 16 | 5,384 99 |
| Dundalk | 12 | 721 | 7,716 56 | 6,380 96 | 1,551 02 | 818 56 | 2,369 58 |
| Bothwell | 12 | 703 | 5,430 65 | 4,511 54 | 1,746 30 | 565 99 | 2,312 29 |
| Lucan | 12 | 662 | 12,230 75 | 10,992 85 | 1,879 34 | 873 49 | 2,752 83 |
| Woodbridge | 12 | 639 | 9,713 52 | 7,916 44 | 2,838 72 | 636 88 | 3,475 60 |
| Ailsa Craig | 12 | 586 | 6,204 16 | 5,870 43 | 893 39 | 401 10 | 1,294 49 |
| Creemore | 12 | 585 | 8,815 93 | 7,748 81 | 2,714 05 | 689 52 | 3,403 57 |
| Coldwater | 12 | 579 | 8,261 10 | 5,067 65 | 1,505 04 | 481 64 | 1,986 68 |
| Wyoming | 2 | 544 | 7,072 08 | 6,794 99 | 116 32 | 103 04 | 219 36 |
| Embro | 12 | 483 | 7,860 70 | 6,973 31 | 1,243 70 | 390 30 | 1,634 00 |
| Flesherton | 12 | 428 | 5,798 12 | 5,321 36 | 1,017 27 | 85 34 | 1,102 61 |
| Woodville | 12 | 388 | 5,497 81 | 5,383 46 | 2,287 11 | 330 46 | 2,617 57 |
| Chatsworth | 11 | 374 | 5,023 26 | 4,767 90 | 884 13 | 310 81 | 1,194 94 |
| Baden | 12 | ..... | 7,191 31 | 3,043 00 | 5,462 16 | 325 28 | 5,787 44 |
| Brechin | 12 | ..... | 2,298 00 | 2,261 66 | 1,826 35 | 171 09 | 1,997 44 |
| Beachville | 12 | ..... | 9,859 19 | 4,565 33 | 5,808 74 | 369 82 | 6,178 56 |
| Burford | 12 | ..... | 6,342 70 | 5,742 10 | 1,299 36 | 413 25 | 1,712 61 |
| Comber | 12 | ..... | 5,803 03 | 5,323 69 | 1,426 85 | 378 26 | 1,805 11 |
| Drumbo | 12 | ..... | 3,844 69 | 3,413 83 | 671 88 | 271 11 | 942 99 |
| Delaware | 12 | ..... | 2,968 76 | 2,757 73 | 439 96 | 229 35 | 669 31 |
| Dorchester | 12 | ..... | 4,782 30 | 3,598 24 | 943 93 | 281 55 | 1,225 48 |
| Elmvale | 12 | ..... | 8,485 66 | 5,852 82 | 1,855 84 | 498 83 | 2,354 67 |
| Granton | 5 | ..... | 3,597 97 | 3,447 72 | 277 24 | 108 53 | 385 77 |

"B"—Continued

for Period ending December 31st, 1916

| Revenue | Surplus | Depreciation | Surplus less Depreciation | Number of Consumers | | | | PerCent. of Consumers to Population | H. P. taken in Dec. 1916 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Domestic | Com'l | Power | Total | | |
| $ c. | $ c. | $ c. | $ c. | | | | | | |
| 4,680 32 | 459 70 | 275 00 | 184 70 | 127 | 79 | 2 | 208 | 12.0 | 60 |
| 6,734 07 | 1,957 16 | 500 00 | 1,457 16 | 185 | 60 | 7 | 252 | 14.5 | 82 |
| 11,769 84 | 2,356 37 | 1,650 00 | 706 37 | 285 | 63 | 10 | 358 | 21.0 | 241 |
| 10,330 45 | 1,311 38 | 1,000 00 | 311 38 | 218 | 103 | 21 | 342 | 20.3 | 145 |
| 3,644 05 | *103 41* | ..... | *103 41* | 155 | 67 | ..... | 222 | 13.9 | 60 |
| 3,292 00 | 536 79 | ..... | 536 79 | 140 | 81 | 2 | 223 | 14.3 | 91 |
| 6,902 49 | 1,158 32 | 830 00 | 328 32 | 196 | 70 | 4 | 270 | 17.5 | 91 |
| 5,918 01 | 314 74 | 314 74 | ..... | 197 | 106 | ..... | 303 | 19.9 | 66 |
| 2,533 66 | 817 59 | 190 00 | 627 59 | 65 | 31 | ..... | 96 | 6.5 | 29 |
| 7,155 91 | 1,987 01 | 440 00 | 1,547 01 | 208 | 85 | ..... | 293 | 20.6 | 75 |
| 4,587 90 | 316 65 | 345 00 | *28 35* | 113 | 58 | 1 | 172 | 12.3 | 48 |
| 4,840 16 | *84 12* | ..... | *84 12* | 330 | 32 | 8 | 370 | * | 71 |
| 2,320 59 | 844 72 | 260 00 | 484 72 | 27 | 37 | 3 | 67 | 5.5 | 43 |
| 11,044 67 | 889 19 | 1,370 00 | *480 81* | 297 | 87 | 6 | 390 | * | 190 |
| 12,296 66 | 3,837 48 | 450 00 | 3,387 48 | 210 | 12 | 4 | 226 | 19.1 | 429 |
| 4,091 34 | 175 36 | ..... | 175 36 | 99 | 42 | 2 | 143 | 12.6 | 114 |
| 1,478 90 | 555 74 | ..... | 555 74 | 112 | 72 | ..... | 184 | 16.5 | 49 |
| 5,061 26 | 1,224 19 | 375 00 | 849 19 | 105 | 63 | 2 | 170 | 15.2 | 95 |
| 6,678 54 | 2,150 77 | 380 00 | 1,770 77 | 127 | 69 | 4 | 200 | 18.1 | 96 |
| 4,943 64 | 926 63 | 370 00 | 556 63 | 135 | 46 | 1 | 182 | 17.1 | 67 |
| 3,535 91 | 776 16 | 470 00 | 306 16 | 145 | 32 | 3 | 180 | 17.2 | 60 |
| 3,851 31 | ..... | ..... | ..... | 131 | 60 | 6 | 197 | 19.4 | 54 |
| 2,735 94 | 626 95 | ..... | 626 95 | 106 | 68 | 3 | 177 | 18.0 | 56 |
| 4,453 83 | 462 26 | 280 00 | 182 26 | 115 | 65 | 3 | 183 | 18.8 | 56 |
| 3,988 31 | ..... | ..... | ..... | 137 | 57 | 7 | 201 | 22.3 | 58 |
| 1,364 93 | 33 72 | ..... | 33 72 | 56 | 50 | ..... | 106 | 11.9 | 40 |
| 4,029 89 | 1,443 53 | 240 00 | 1,203 53 | 112 | 52 | 1 | 165 | 19.0 | 44 |
| 8,422 26 | 1,207 61 | 665 00 | 542 61 | 308 | 72 | 11 | 391 | * | 59 |
| 3,707 10 | 772 85 | 375 00 | 397 85 | 89 | 47 | 1 | 137 | 16.0 | 61 |
| 3,373 85 | 514 44 | 260 00 | 254 44 | 83 | 48 | 2 | 133 | 16 6 | 39 |
| 5,215 15 | 940 67 | 887 00 | 53 67 | 93 | 32 | 6 | 131 | * | 48 |
| 3,806 38 | 907 97 | 190 00 | 717 97 | 137 | 59 | ..... | 196 | 25.5 | 40 |
| 6,836 19 | 1,451 20 | 321 00 | 1,130 20 | 70 | 36 | 4 | 110 | 15.1 | 99 |
| 3,247 40 | 877 82 | 200 00 | 677 82 | 88 | 63 | 2 | 153 | 21.2 | 70 |
| 2,882 81 | 570 52 | 135 00 | 435 52 | 78 | 52 | ..... | 130 | 18.5 | 28 |
| 3,256 56 | 503 73 | 270 00 | 233 73 | 98 | 42 | 7 | 147 | 22.2 | 50 |
| 4,248 25 | 772 65 | 300 00 | 472 65 | 58 | 33 | 7 | 98 | 15.3 | 78 |
| 1,628 22 | 333 73 | 180 00 | 153 73 | 51 | 11 | 1 | 63 | 10.8 | 18 |
| 3,996 85 | 593 28 | 200 00 | 393 28 | 78 | 44 | 2 | 124 | 21.2 | 41 |
| 2,602 35 | 615 67 | 325 00 | 290 67 | 70 | 39 | 2 | 111 | 19.2 | 37 |
| 310 22 | 90 86 | ..... | 90 86 | 45 | 28 | ..... | 73 | 13.4 | 27 |
| 2,131 25 | 497 25 | 235 00 | 262 25 | 58 | 29 | 2 | 89 | ..... | 27 |
| 1,496 59 | 393 98 | 150 00 | 243 98 | 73 | 30 | ..... | 103 | ..... | 33 |
| 2,617 57 | ..... | ..... | ..... | 41 | 24 | 3 | 68 | ..... | 46 |
| 1,275 30 | 80 36 | ..... | 80 36 | 36 | 23 | 1 | 60 | ..... | 30 |
| 6,551 01 | 763 57 | 275 00 | 488 57 | 84 | ..... | 5 | 89 | ..... | 220 |
| 1,997 44 | ..... | ..... | ..... | 16 | 20 | 1 | 37 | ..... | 33 |
| 6,207 45 | 28 89 | 375 00 | *340 11* | 42 | 12 | 3 | 57 | ..... | 188 |
| 2,049 85 | 337 24 | 165 00 | 172 24 | 64 | 30 | 1 | 95 | ..... | 27 |
| 1,996 66 | 191 55 | 145 00 | 46 55 | 37 | 37 | ..... | 74 | ..... | 21 |
| 1,154 75 | 211 76 | 110 00 | 101 76 | 35 | 22 | ..... | 57 | ..... | 15 |
| 737 74 | 68 43 | 80 00 | *11 57* | 23 | 12 | ..... | 35 | ..... | 8 |
| 1,883 52 | 658 04 | 150 00 | 508 04 | 61 | 16 | 2 | 79 | ..... | 11 |
| 3,221 44 | 866 77 | 290 00 | 576 77 | 81 | 62 | 3 | 146 | ..... | 70 |
| 491 75 | 105 98 | ..... | 105 98 | 41 | 16 | ..... | 57 | ..... | 1 |

## STATEMENT

### Report Showing Operation of Municipalities

| Municipality | Months Covered by Report | Population | Plant Cost | Debenture Debt and Overdraft | Operation and Maintenance | Fixed Charges | Total Operation |
|---|---|---|---|---|---|---|---|
| | | | $ c. | $ c. | $ c. | $ c. | $ c. |
| Grantham Tp. | 12 | ..... | 3,900 47 | 5,202 84 | 1,614 28 | 2,997 93 | 4,612 21 |
| Holstein ..... | 8 | ..... | 2,452 96 | 2,424 65 | 263 99 | 229 17 | 493 16 |
| Lambeth .... | 12 | ..... | 4,241 08 | 3,868 09 | 951 60 | 382 49 | 1,334 09 |
| Lynden..... | 12 | ..... | 4,436 41 | 4,135 14 | 1,038 66 | 315 32 | 1,353 98 |
| Mt. Brydges . | 12 | ..... | 4,279 76 | 3,957 02 | 1,479 45 | 296 20 | 1,775 65 |
| Otterville ... | 10 | ..... | 3,835 12 | 3,641 53 | 517 84 | 346 74 | 864 58 |
| Plattsville... | 12 | ..... | 5,282 62 | 4,346 43 | 2,235 22 | 346 17 | 2,581 39 |
| Princeton.... | 12 | ..... | 3,219 33 | 3,032 12 | 1,077 47 | 239 57 | 1,317 04 |
| Pt. McNicoll . | 12 | ..... | 4,982 48 | 5,001 41 | 972 85 | 482 51 | 1,455 36 |
| Rockwood.... | 12 | ..... | 6,986 46 | 2,940 86 | 1,065 53 | 395 77 | 1,461 30 |
| Sunderland .. | 12 | ..... | 6,715 13 | 6,461 35 | 1,677 81 | 399 07 | 2,076 88 |
| St. George ... | 12 | ..... | 5,151 10 | 4,178 41 | 1,358 57 | 412 83 | 1,771 40 |
| Stamford Tp. | 12 | ..... | 29,671 12 | 28,310 73 | 2,964 95 | 737 19 | 3,702 14 |
| Thorndale ... | 12 | ..... | 3,142 58 | 2,896 93 | 1,383 40 | 205 60 | 1,589 00 |
| Thamesford.. | 12 | ..... | 5,796 81 | 4,289 86 | 1,221 72 | 477 08 | 1,698 80 |
| Toronto Twp. | 12 | ..... | 15,681 34 | 9,279 92 | 3,031 97 | 3,253 87 | 6,285 84 |
| Williamsburg. | 12 | ..... | 2,274 45 | 1,671 79 | 703 09 | 220 67 | 923 76 |
| Waubashene . | 12 | ..... | 4,059 62 | 3,546 08 | 883 12 | 425 56 | 1,308 68 |
| Total ..... | | 1,155,000 | 17,330,015 07 | 12,580,845 40 | 3,188,283 52 | 951,781 99 | 4,140,065 51 |

NOTE—Population in Villages estimated at 400

† Competitive territory.
* Rural or Summer populations create abnormal condition.

"B" —Continued

for Period ending 31st December, 1916

| Revenue | Surplus | Depreciation | Surplus less Depreciation | Number of Consumers | | | | Per Cent. of Consumers to Population | H. P. taken in Dec. 1916 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Domestic | Com'l | Power | Total | | |
| $ c. | $ c. | $ c. | $ c. | | | | | | |
| 3,030 72 | 1,581 40 | ..... | 1,581 40 | 130 | ..... | ..... | 130 | ..... | 19 |
| 435 43 | 57 73 | ..... | 57 73 | 26 | 14 | ..... | 40 | ..... | 8 |
| 1,453 97 | 119 88 | 100 00 | 19 88 | 54 | 13 | 1 | 68 | ..... | 18 |
| 1,492 71 | 138 73 | 120 00 | 18 73 | 24 | 10 | 1 | 35 | ..... | 86 |
| 2,107 79 | 332 14 | 125 00 | 207 14 | 55 | 15 | 2 | 72 | ..... | 25 |
| 879 19 | 14 61 | ..... | 14 61 | 40 | 24 | 1 | 65 | ..... | 15 |
| 3,217 54 | 636 15 | 145 00 | 491 15 | 60 | 22 | 3 | 85 | ..... | 53 |
| 1,325 14 | 8 10 | 96 00 | 87 90 | 44 | 11 | ..... | 55 | ..... | 10 |
| 1,264 11 | 191 25 | 130 00 | 321 25 | 66 | 21 | 1 | 88 | ..... | 21 |
| 2,531 28 | 1,069 98 | 240 00 | 829 98 | 72 | 11 | 4 | 87 | ..... | 15 |
| 2,076 88 | ..... | ..... | ..... | 61 | 37 | 1 | 99 | ..... | 52 |
| 2,385 13 | 613 73 | 150 00 | 463 73 | 56 | 24 | 2 | 82 | ..... | 56 |
| 5,062 53 | 1,360 39 | ..... | 1,360 39 | 160 | ..... | 15 | 175 | ..... | ..... |
| 1,485 93 | 103 07 | 85 00 | 188 07 | 33 | 12 | 1 | 46 | ..... | 42 |
| 1,923 86 | 225 06 | 235 00 | 9 94 | 64 | 29 | 2 | 95 | ..... | 32 |
| 8,369 78 | 2,083 94 | 1,934 00 | 149 94 | 213 | ..... | ..... | 213 | ..... | 88 |
| 1,299 35 | 375 59 | 70 00 | 305 59 | 41 | 9 | 1 | 51 | ..... | 17 |
| 1,540 57 | 231 89 | 115 00 | 116 89 | 58 | 20 | 1 | 79 | ..... | 19 |
| 4,983,601 03 | 843,535 52 | 486,141 80 | 357,393 72 | 118,849 | 25,230 | 4,653 | 148,732 | ..... | ..... |

STATE

## Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | Toronto | | | | Hamilton |
|---|---|---|---|---|---|
| Population | xa 463,705 | | | | 100,461 xa |
| —— | 1913 | 1914 | 1915 | 1916 | 1913 |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 190,376 89 | 289,645 45 | 331 807 18 | 335,181 19 | 34,451 95 |
| Commercial Light | 233,799 04 | 305,534 31 | 291,907 92 | 272,243 06 | 25,453 99 |
| Power | 347,708 88 | 483,681 15 | 575,239 17 | 612,918 32 | 47,415 58 |
| Street Light | 344,933 79 | 364,214 17 | 350,085 97 | 361,920 32 | 2,250 89 |
| Miscellaneous | 29,891 21 | 39,651 98 | 40,076 70 | 108,735 53 | 9,841 52 |
| Total | 1,146,709 81 | 1,482,727 06 | 1,589,116 94 | 1,690,998 42 | 119,413 93 |
| EXPENSES | | | | | |
| Power Purchased | 255,986 26 | 323,586 97 | 430,830 00 | 529,180 54 | 47,307 65 |
| Sub-Stn. Operation | 32,216 66 | 42,667 33 | 42,890 24 | 44,866 07 | 3,240 97 |
| " " Maint'ce. | 11,510 69 | 23,560 14 | 17,243 40 | 35,187 08 | 94 01 |
| Dist. System, Operation and Maintenance | 50,693 34 | 59,013 81 | 59,782 15 | 53,175 4c | 3,168 21 |
| Line Transformer M't'c'e. | 3,396 98 | 5,218 22 | 6,768 29 | 4,976 03 | 1,216 21 |
| Meter Maintenance | 1,648 28 | 3,072 21 | 3,856 44 | 7,085 21 | 16 39 |
| Consumers' Premises–Exp. | 36,536 64 | 52,893 31 | 37,821 37 | 44,278 89 | 2,693 70 |
| Street Light Sys., Operation and Maintenance | 45,801 72 | 48,674 18 | 63,981 72 | 61,202 90 | 1,375 46 |
| Promotion of Business | 60,256 03 | 71,477 64 | 54,128 73 | 53,416 92 | 4,391 01 |
| Billing and Collecting | 43,581 71 | 50,028 39 | 64,825 42 | 72.579 07 | 6,270 38 |
| Gen. Office, Sal. and Exp. | 85,957 58 | 125,972 92 | 93,332 31 | 124,068 67 | 3,623 22 |
| Undistributed Expenses | 44,304 25 | 54,191 98 | 57,693 43 | 33.762 17 | 1,289 35 |
| Int. and Deb. Payments. | 274,285 24 | 325,551 67 | 362,337 99 | 400,434 57 | 30,201 49 |
| Miscellaneous Expenses | ..... | b 4,335 80 | b 23,330 01 | ..... | ..... |
| Total Expenses | 946,175 38 | 1,190,244 57 | 1,318,821 50 | 1,464,213 52 | 104,888 05 |
| Surplus | 200,534 43 | 292,482 49 | 270,295 44 | 226,784 90 | 14,525 88 |
| Loss | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge. | 115,236 80 | 147,181 40 | 173.862 95 | 208,388 09 | 9,031 35 |
| Surp. Less Depr. Chg. | 85,297 63 | 145,301 09 | 96.432 49 | 18,396 81 | 5,494 53 |

"b" Patriotic Fund contributions.
xa Hydro Department operated separately.
xb Hydro and Water Departments operated jointly.
xc Hydro and Gas Departments operated jointly.
xd Hydro and Railway Departments operated jointly.
xe Hydro, Railway and Gas Departments operated jointly.
xf Hydro, Water and Gas Departments operated jointly.
xg Hydro, Water, Telephone and Railway Departments operated jointly.
xh Hydro Department handled by municipal officials.

MENT "C"

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| xa | Hamilton 100,461 | | | xa | Ottawa 100,163 | | | |
|---|---|---|---|---|---|---|---|---|
| | 1914 | 1915 | 1916 | | 1913 | 1914 | 1915 | 1916 |
| | $ c. | $ c. | $ c. | | $ c. | $ c. | $ c. | $ c. |
| | 74,668 38 | 92,723 71 | 108,137 22 | | 68,032 27 | 68,767 48 | 67,441 19 | 72,875 12 |
| | 35,125 57 | 34,754 72 | 36,126 03 | | 53,438 04 | 51,769 72 | 46,636 99 | 42,569 96 |
| | 70,665 43 | 83,990 38 | 115 224 78 | | 26,978 76 | 31,748 23 | 32,126 50 | 42,996 39 |
| | 51,154 36 | 86,244 98 | 80,815 73 | | 49,199 57 | 50,439 29 | 56,813 66 | 60,632 48 |
| | 2,564 82 | 2,619 70 | 3,026 87 | | ..... | 183 11 | 225 48 | 406 45 |
| | 234,178 56 | 300,333 49 | 343,330 63 | | 197,648 64 | 202,910 83 | 203,243 82 | 219,480 40 |
| | 78,968 72 | 103,922 98 | 121,982 71 | | 50,750 00 | 55,512 39 | 53,018 54 | 60,859 15 |
| | 5,741 24 | 7,226 49 | 9,107 51 | | 3,127 63 | 3,321 20 | 3,989 78 | 4,341 42 |
| | 653 61 | 1,644 78 | 2,012 08 | | 107 58 | 300 81 | 588 81 | 132 82 |
| | 6,504 84 | 14,090 13 | 6,847 26 | | 13,694 44 | 17,041 58 | 18,193 82 | 17,787 91 |
| | 505 26 | 921 70 | 1,067 67 | | 245 82 | 1,996 40 | 635 82 | 683 36 |
| | 143 97 | 1,172 88 | 886 05 | | 1,537 17 | 2,390 11 | 3,444 25 | 3,241 68 |
| | 2,782 23 | 4,061 03 | 3,556 22 | | 10,572 43 | 6,082 30 | 2,534 80 | ..... |
| | 13,380 35 | 10,394 16 | 10,735 03 | | 15,465 59 | 15,318 91 | 19,712 71 | 15,147 81 |
| | 3,999 76 | 3,443 77 | 3,752 54 | | 1,008 50 | 1,060 00 | 3,118 79 | 8,277 56 |
| | 10,825 27 | 13,832 80 | 15,780 73 | | 6,417 69 | 7,481 30 | 8,915 38 | 13,722 50 |
| | 12,894 66 | 17,083 98 | 17,740 82 | | 6,941 68 | 9,604 33 | 11,699 46 | 11,470 18 |
| | 3,407 34 | 4,972 47 | 4,374 48 | | 1,453 47 | 2,350 91 | 3,671 03 | 4,660 34 |
| | 46,398 68 | 60,759 61 | 61,266 73 | | 30,961 54 | 38,002 88 | 40,365 58 | 42,371 44 |
| | ..... | ..... | ..... | | ..... | ..... | ..... | b 716 29 |
| | 186,205 93 | 243,526 78 | 259,109 83 | | 142,283 54 | 160,463 12 | 169,888 77 | 183,412 46 |
| | 47,972 63 | 56,806 71 | 84,220 80 | | 55,365 10 | 42,447 71 | 33,355 05 | 36,067 94 |
| | ..... | ..... | ..... | | ..... | ..... | ..... | ..... |
| | 21,053 66 | 25,808 87 | 32,110 54 | | 24,000 00 | 32,650 00 | 33,000 00 | 32,775 00 |
| | 26,918 97 | 30,997 84 | 52,110 26 | | 31,365 10 | 9,797 71 | 355 05 | 3,292 94 |

"b" Patriotic Fund Contributions.
xa See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | London | | | | Brantford |
|---|---|---|---|---|---|
| Population | xb 58,055 | | | | 25,420 xd |
| —— | 1913 | 1914 | 1915 | 1916 | 1914 |
| | | | | | 1 |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 41,172 64 | 57,473 08 | 57,184 75 | 71,146 90 | 7,103 77 |
| Commercial Light | 39,256 07 | 47,593 44 | 43,751 37 | 48,747 74 | 5,392 87 |
| Power | 79,659 78 | 130,936 35 | 148,567 23 | 180,204 33 | 647 69 |
| Street Light | 28,372 20 | 30,535 83 | 31,168 87 | 31,719 17 | 21,724 64 |
| Miscellaneous | 3,763 78 | 3,313 10 | 4,958 29 | 8,973 65 | 627 57 |
| Total | 192,224 47 | 269,851 80 | 285,630 51 | 340,791 79 | 35,496 54 |
| EXPENSES | | | | | |
| Power Purchased | 72,676 41 | 97,404 63 | 122,893 29 | 155,208 55 | 12,999 65 |
| Sub-Stn. Operation | 5,816 18 | 9,925 89 | 8,671 25 | 11,260 87 | 1,069 43 |
| " " Maint'ce... | 519 81 | 767 40 | 135 79 | 329 76 | 7 84 |
| Dist. System, Operation and Maintenance | 5,342 67 | 3,850 78 | 5,220 69 | 6,069 41 | 376 83 |
| Line Transformer M't'c'e. | 1,674 88 | 760 87 | 94 82 | 839 69 | 65 26 |
| Meter Maintenance | 138 23 | 95 60 | 372 13 | 3,169 66 | 10 08 |
| Consumers' Premises–Exp.. | 1,827 71 | 2,119 53 | 2,455 20 | 3,217 49 | 40 |
| Street Light Sys., Operation and Maintenance.. | 5,278 72 | 8,511 05 | 6,303 42 | 7,577 61 | 1,460 00 |
| Promotion of Business .. | 5,833 84 | 5,840 01 | 6,902 59 | 7,853 28 | 1,608 37 |
| Billing and Collecting ... | 6,738 13 | 9,126 81 | 10,762 84 | 10,560 10 | 994 63 |
| Gen. Office, Sal. and Exp.. | 14,180 20 | 16,845 61 | 15,042 13 | 12,777 04 | 1,089 66 |
| Undistributed Expenses . | 6,297 08 | 6,687 31 | 4,943 05 | 6,866 73 | 215 98 |
| Int. and Deb. Payments.. | 29,488 97 | 35,127 20 | 38,493 89 | 40,099 60 | 7,444 31 |
| Miscellaneous Expenses .. | ..... | ..... | b 2,776 28 | 4,500 56 | ..... |
| Total Expenses | 155,812 83 | 197,062 69 | 225,067 37 | 270,330 35 | 27,322 44 |
| Surplus | 36,411 64 | 72,789 11 | 60,563 14 | 70,461 44 | 8,174 10 |
| Loss | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge . | 21,058 82 | 27,588 39 | 32,734 97 | 29,060 62 | 6,000 00 |
| Surp. Less Depr. Chg. | 15,352 82 | 45,200 72 | 27,828 17 | 41,400 82 | 2,174 10 |

"b" Patriotic Fund contributions.
"1" 9 months' operation.
xb, xd See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Brantford xd 25,420 | | Windsor xa 24,162 | | | Kitchener xe 19,266 | |
|---|---|---|---|---|---|---|
| 1915 | 1916 | 1914 | 1915 | 1916 | 1913 | 1914 |
| | | f | | | p | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 13,629 36 | 17,504 44 | 3,143 41 | 23,161 57 | 35,565 59 | 16,558 82 | 17,757 08 |
| 10,746 67 | 10,530 19 | 1,107 38 | 12,009 99 | 16,831 60 | 20,985 35 | 19,549 45 |
| 12,901 29 | 24,213 00 | 9 77 | 3,734 81 | 7,370 82 | 38,368 34 | 49,173 17 |
| 28,691 05 | 27,500 83 | 3,997 85 | 31,947 11 | 37,266 17 | 17,373 81 | 16,544 11 |
| 327 94 | 294 05 | ..... | 961 07 | 2,768 13 | 1,268 87 | 1,726 92 |
| 66,296 31 | 80,042 51 | 8,258 41 | 71,814 55 | 99,802 51 | 94,555 19 | 104,750 73 |
| 24,661 13 | 33,566 59 | 4,330 41 | 38,849 61 | 51,655 51 | 33,359 47 | 40,275 75 |
| 2,111 85 | 2,975 10 | 408 67 | 2,588 72 | 2,466 76 | 4,892 72 | 4,282 95 |
| 177 02 | 114 98 | ..... | 236 47 | 282 77 | 1,175 64 | 294 68 |
| 684 06 | 814 74 | 240 41 | 629 41 | 816 44 | 1,575 15 | 4,411 10 |
| 160 65 | 267 97 | ..... | 48 49 | 157 84 | 205 39 | 20 35 |
| 199 00 | 167 27 | ..... | 11 70 | 131 68 | 326 51 | 564 97 |
| 3 53 | 3 19 | ..... | 222 87 | 750 40 | 101 97 | 75 83 |
| 3,420 03 | 3,110 37 | ..... | 1,667 97 | 6,647 83 | 2,803 88 | 3,884 76 |
| 1,644 50 | 1,313 05 | ..... | 1,455 58 | 1,301 56 | 452 28 | 630 50 |
| 1,625 66 | 1,819 63 | 441 36 | 2,416 24 | 4,661 77 | 1,901 40 | 2,259 54 |
| 1,443 91 | 1,371 24 | 2,170 90 | 3,821 74 | 4,922 46 | 2,532 25 | 2,615 07 |
| 798 48 | 1,210 57 | ..... | 1,502 25 | 2,887 17 | 1,966 04 | 1,966 38 |
| 14,686 37 | 17,221 00 | 666 66 | 13,038 53 | 17,258 16 | 17,897 45 | 18,719 43 |
| ..... | ..... | ..... | ..... | ..... | ..... | b 619 00 |
| 81,616 19 | 63,955 70 | 8,258 41 | 66,489 68 | 93,940 35 | 69,190 15 | 80,620 31 |
| 14,680 12 | 16,086 81 | ..... | 5,324 87 | 5,862 16 | 25,365 04 | 24,130 42 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 10,000 00 | 7,500 00 | ..... | ..... | 5,157 50 | 10,980 79 | 12,884 05 |
| 4,680 12 | 8,586 81 | ..... | 5,324 87 | 704 66 | 14,384 25 | 11,246 37 |

"f" 4 months' operation.
"p" 13 months' operation.
xa, xd, xe See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality / Population | Kitchener xe 19,266 | | Peterboro' xb 20,426 | | |
|---|---|---|---|---|---|
| —— | 1915 | 1916 | 1914 | 1915 | 1916 |
| EARNINGS | | | e | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 19,108 60 | 20,876 63 | 8,661 71 | 27,991 24 | 31,020 72 |
| Commercial Light | 16,807 15 | 17,323 67 | 7,749 91 | 27,563 41 | 26,403 82 |
| Power | 54,732 50 | 62,436 31 | 7,013 23 | 30,185 83 | 36,597 04 |
| Street Light | 17,017 43 | 18,621 19 | 3,081 59 | 12,294 64 | 13,257 49 |
| Miscellaneous | 2,714 76 | 2,428 77 | ..... | ..... | ..... |
| Total | 110,380 44 | 121,686 57 | 26,506 44 | 98,035 12 | 107,279 07 |
| EXPENSES | | | | | |
| Power Purchased | 47,644 33 | 59,814 81 | 11,920 90 | 45,240 12 | 48,888 66 |
| Sub-Stn. Operation | 3,727 21 | 3,888 64 | 840 05 | 3,269 50 | 2,498 52 |
| " " Maint'ce... | 465 16 | 621 93 | 9 08 | 313 85 | 464 58 |
| Dist. System, Operation and Maintenance | 4,193 45 | 4,392 79 | 996 31 | 4,632 71 | 7,963 09 |
| Line Transformer M't'c'e. | 21 76 | 28 05 | 26 35 | 178 43 | 387 43 |
| Meter Maintenance | 384 57 | 442 18 | 6 52 | 1,326 47 | 1,242 59 |
| Consumers' Premises–Exp. | 127 92 | 24 07 | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance.. | 1,699 89 | 1,976 07 | 1,465 01 | 6,000 91 | 5,367 18 |
| Promotion of Business .. | 169 29 | 118 17 | ..... | ..... | ..... |
| Billing and Collecting ... | 2,569 37 | 2,809 95 | 242 70 | 2,125 05 | 2,865 07 |
| Gen. Office, Sal. and Exp.. | 2,686 19 | 2,603 33 | 3,777 45 | 9,542 34 | 7,617 20 |
| Undistributed Expenses .. | 2,427 57 | 2,099 02 | 214 94 | 821 47 | 1,756 07 |
| Int. and Deb. Payments.. | 18,436 93 | 18,474 43 | 2,026 21 | 13,372 97 | 11,981 33 |
| Miscellaneous Expenses .. | b 1,265 63 | b 1,244 84 | ..... | ..... | ..... |
| Total Expenses | 85,819 27 | 98,538 28 | 21,525 52 | 86,823 82 | 91,031 72 |
| Surplus | 24,561 17 | 23,148 29 | 4,980 92 | 11,211 30 | 16,247 35 |
| Loss | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge . | 13,500 00 | 14,638 25 | ..... | 7,500 00 | 6,250 00 |
| Surp. Less Depr. Chg. | 11,061 17 | 8,510 04 | 4,980 92 | 3,711 30 | 9,997 35 |

"b" Patriotic Fund contribution.
"e" 3 months' operation.
xb, xe See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| xa St. Catharines 17,880 | | | xc St. Thomas 17,174 | | | |
|---|---|---|---|---|---|---|
| 1914 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 |
| e | | | | | | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 2,013 49 | 9,540 70 | 16,419 57 | 11,125 50 | 13,221 00 | 16,517 37 | 20,210 52 |
| 412 75 | 3,810 11 | 5,925 49 | 16,097 41 | 13,480 75 | 13,422 48 | 15,145 47 |
| 12,742 98 | 25,193 30 | 40,688 67 | 36,550 26 | 44,247 13 | 44,780 45 | 46,698 91 |
| 944 63 | 11,579 42 | 15,261 33 | 10,989 22 | 11,025 36 | 14,199 64 | 14,690 24 |
| 44 28 | 522 83 | 519 18 | 361 15 | 869 76 | 984 54 | 1,413 94 |
| 16,158 13 | 50,646 36 | 78,814 24 | 75,124 04 | 82,844 00 | 89,904 48 | 98,159 08 |
| 9,328 14 | 19,191 12 | 29,827 81 | 31,435 85 | 38,279 18 | 44,655 44 | 47,539 96 |
| 579 90 | 1,617 35 | 2,235 46 | 2,452 25 | 2,571 06 | 2,567 38 | 2,575 16 |
| 46 19 | 237 97 | 53 27 | 913 99 | 80 40 | 107 33 | 603 07 |
| 249 06 | 2,069 73 | 1,994 66 | 1,580 22 | 2,989 04 | 5,392 80 | 3,621 55 |
| 640 56 | 242 25 | 1,290 92 | 47 57 | 77 64 | 154 75 | 47 02 |
| 152 97 | 254 38 | 221 07 | 53 40 | 183 34 | 170 35 | 77 42 |
| ..... | ..... | ..... | ..... | ..... | ..... | 75 77 |
| 443 16 | 1,281 13 | 1,693 72 | 2,405 21 | 3,023 53 | 2,454 54 | 2,834 07 |
| 981 77 | 1,459 99 | 1,238 73 | ..... | ..... | 1,224 10 | 707 81 |
| 107 00 | 984 37 | 871 98 | 339 43 | 1,604 98 | 1,393 43 | 1,593 06 |
| 607 53 | 4,213 82 | 5,496 64 | 1,593 77 | 2,733 80 | 3,037 32 | 2,949 91 |
| ..... | 250 93 | 555 21 | 739 67 | 967 72 | 2,248 54 | 1,934 95 |
| 1,105 87 | 9,724 03 | 12,411 67 | 7,402 65 | 7,406 14 | 8,359 74 | 8,314 07 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 14,242 15 | 41,527 07 | 57,891 14 | 48,964 01 | 59,916 83 | 71,765 72 | 72,873 82 |
| 1,915 98 | 9,119 29 | 20,923 10 | 26,160 03 | 22,927 17 | 18,138 76 | 25,285 26 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 850 00 | 7,250 00 | 10,500 00 | 6,900 00 | 7,350 00 | 8,735 00 | 9,800 00 |
| 1,065 98 | 1,869 29 | 10,423 10 | 19,260 03 | 15,577 17 | 9,403 76 | 15,485 26 |

"e"—3 months' operation.

xa, xc See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | Stratford | | | | Guelph |
|---|---|---|---|---|---|
| Population | xb 17,081 | | | | 16,735 xc |
| —— | 1913 | 1914 | 1915 | 1916 | 1913 |
| EARNINGS | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 11,636 59 | 15,180 91 | 16,967 58 | 20,108 76 | 11,528 09 |
| Commercial Light | 17,033 98 | 16,336 30 | 14,766 75 | 14,803 08 | 15,075 61 |
| Power | 15,123 78 | 16,519 24 | 18,178 84 | 23,506 12 | 42,091 34 |
| Street Light | 12,120 00 | 12,120 00 | 15,466 32 | 15,753 20 | 9,500 04 |
| Miscellaneous | 69 33 | 1,319 04 | 1,449 46 | 760 70 | 2,531 74 |
| Total | 55,983 68 | 61,475 49 | 66,828 95 | 74,931 86 | 80,726 82 |
| EXPENSES | | | | | |
| Power Purchased | 22,028 75 | 25,875 69 | 31,081 79 | 37,453 45 | 32,473 66 |
| Sub-Stn. Operation | 1,651 06 | 1,557 16 | 1,752 93 | 1,615 03 | 1,700 14 |
| " " Maint'ce... | 200 54 | 16 70 | 71 99 | 391 78 | 1,076 44 |
| Dist. System. Operation and Maintenance | 1,630 72 | 2,516 22 | 1,985 74 | 1,896 78 | 3,004 51 |
| Line Transformer M't'c'e. | 148 48 | 1 56 | 44 37 | 19 20 | 179 90 |
| Meter Maintenance | 261 33 | 37 34 | 153 44 | 76 04 | 585 91 |
| Consumers' Premises–Exp. | 501 90 | ..... | ..... | ..... | 206 39 |
| Street Light Sys., Operation and Maintenance | 1,509 91 | 926 11 | 1,627 04 | 1,056 63 | 1,566 58 |
| Promotion of Business | ..... | 62 45 | 15 37 | ..... | ..... |
| Billing and Collecting | 1,325 47 | 1,647 47 | 2,007 92 | 1,948 60 | 430 35 |
| Gen. Office, Sal. and Exp. | 2,339 27 | 1,918 44 | 1,900 16 | 1,577 91 | 3,424 77 |
| Undistributed Expenses | 211 15 | 1,211 78 | 1,934 03 | 2,497 66 | 1,750 98 |
| Int. and Deb. Payments | 10,536 75 | 12,989 75 | 14,398 80 | 14,794 02 | 10,273 27 |
| Miscellaneous Expenses | ..... | b 1,750 00 | b 3,752 52 | ..... | x 884 95 |
| Total Expenses | 42,345 33 | 50,724 89 | 60,726 10 | 63,327 10 | 57,567 85 |
| Surplus | 13,638 35 | 10,750 60 | 6,102 95 | 11,604 76 | 23,158 97 |
| Loss | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | 3,420 00 | 4,631 50 | 5,250 00 | 7,500 00 | 8,000 00 |
| Surp. Less Depr. Chg. | 10,218 35 | 6,119 10 | 852 86 | 4,104 76 | 15,158 97 |

"b" Patriotic Fund contributions.
"x" Motor repairs.
xb, xc See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| xc Guelph 16,735 | | | xg Port Arthur 14,307 | | | |
|---|---|---|---|---|---|---|
| 1914 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 16,920 54 | 15,514 10 | 17,221 76 | 81,830 66 | 38,097 65 | 32,048 37 | 31,152 52 |
| 15,923 51 | 12,692 86 | 13,710 72 | h | 32,933 91 | 28,662 58 | 27,439 63 |
| 38,148 46 | 38,404 28 | 48,369 83 | 78,193 51 | 92,804 49 | 85,060 78 | 96,913 51 |
| 9,590 66 | 9,298 95 | 9,518 72 | 14,709 41 | 15,458 88 | 15,514 61 | 15,207 40 |
| 1,516 42 | 1,947 98 | 2,710 64 | ..... | ..... | 1,247 52 | 269 92 |
| 82,099 59 | 77,858 17 | 91,531 67 | 174,733 58 | 179,294 93 | 162,533 86 | 170,982 98 |
| 30,460 41 | 37,292 12 | 45,528 08 | 43,664 83 | 53,412 42 | 54,667 89 | 54,798 85 |
| 540 50 | 1,254 90 | 43 22 | 3,652 53 | 3,268 30 | 7,173 12 | 5,783 85 |
| 733 05 | 1,468 03 | 1,255 04 | 2,140 94 | 4,323 79 | ..... | 585 15 |
| 3,897 65 | 1,592 39 | 1,888 83 | 9,013 80 | 8,003 88 | 6,357 20 | 2,987 89 |
| 161 05 | 240 75 | 148 83 | 1 75 | 454 62 | 284 10 | 695 92 |
| 711 63 | 756 35 | 912 62 | 112 13 | 670 91 | 827 62 | 1,228 18 |
| ..... | ..... | ..... | 322 64 | 945 31 | 239 00 | ..... |
| 1,380 19 | 1,343 16 | 1,236 44 | 1,543 03 | 2,146 96 | 1,764 92 | 1,297 59 |
| ..... | ..... | ..... | 361 85 | 100 85 | 416 67 | 102 95 |
| 2,257 35 | 2,695 89 | 2,616 35 | 2,630 19 | 5,324 25 | 3,296 52 | 2,261 85 |
| 3,003 77 | 3,710 93 | 3,233 54 | 2,613 61 | 2,557 42 | 8,163 89 | 9,290 32 |
| 2,351 61 | 2,943 66 | 3,393 91 | 2,012 67 | 2,357 63 | 685 08 | 1,199 83 |
| 10,273 27 | 10,273 28 | 10,273 28 | 37,556 73 | 40,489 67 | 49,132 16 | 47,428 64 |
| x 834 02 | x 976 72 | x 1,927 63 | ..... | ..... | 965 05 | ..... |
| 56,604 50 | 64,548 18 | 72,457 77 | 105,626 70 | 124,056 01 | 133,973 22 | 127,661 02 |
| 25,495 09 | 13,309 99 | 19,073 90 | 69,106 88 | 55,238 92 | 28,560 64 | 43,321 96 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 10,200 00 | 10,500 00 | 10,700 00 | 13,647 55 | 16,469 79 | 11,723 21 | ..... |
| 15,295 09 | 2,809 99 | 8,373 90 | 55,459 33 | 38,769 13 | 16,837 43 | 43,321 96 |

"x" Motor repairs.

xc, xg See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality / Population | Chatham xa 12,863 | | Owen Sound xf 11,910 | Galt xa 11,852 | | |
|---|---|---|---|---|---|---|
| —— | 1915 | 1916 | 1916 | 1913 | 1914 | 1915 |
| | m | | | | | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 5,581 54 | 10,155 37 | 16,003 61 | 10,535 38 | 15,797 16 | 17,024 42 |
| Commercial Light | 2,806 81 | 7,427 36 | 23,724 21 | 11,648 49 | 11,952 75 | 8,794 36 |
| Power | 449 70 | 3,766 37 | 13,772 61 | 16,575 61 | 23,826 87 | 30,547 84 |
| Street Light | 7,616 36 | 13,169 02 | 7,000 00 | 6,280 25 | 8,500 00 | 12,981 29 |
| Miscellaneous | ..... | 396 34 | 700 70 | 194 00 | 919 15 | 373 24 |
| Total | 16,454 41 | 34,914 46 | 61,201 13 | 45,233 73 | 60,995 93 | 69,721 15 |
| EXPENSES | | | | | | |
| Power Purchased | 7,171 72 | 15,427 10 | 25,067 12 | 17,883 91 | 21,134 48 | 29,961 84 |
| Sub-Stn. Operation | 318 56 | 1,053 43 | 5,439 60 | 1,761 14 | 1,930 96 | 2,283 95 |
| " " Maint'ce... | 23 48 | 50 20 | ..... | 180 76 | 99 42 | 280 66 |
| Dist. System, Operation and Maintenance | 102 09 | 839 35 | 2,742 65 | 446 24 | 1,729 80 | 1,499 76 |
| Line Transformer M't'c'e. | 15 25 | 68 62 | 468 48 | 11 48 | 129 05 | 120 76 |
| Meter Maintenance | 45 94 | 92 43 | 318 35 | 2 00 | 91 88 | 57 81 |
| Consumers' Premises–Exp. | ..... | 535 22 | ..... | ..... | 208 64 | ..... |
| Street Light Sys., Operation and Maintenance | 396 40 | 1,817 32 | 2,806 42 | 296 88 | 2,234 06 | 3,066 10 |
| Promotion of Business | 326 00 | 353 85 | ..... | ..... | ..... | ..... |
| Billing and Collecting | 810 65 | 1,624 56 | 1,119 74 | 1,188 20 | 1,868 30 | 2,226 16 |
| Gen. Office, Sal. and Exp. | 1,630 14 | 2,079 44 | 3,120 54 | 1,792 40 | 1,618 71 | 2,713 64 |
| Undistributed Expenses | 871 85 | 1,515 83 | 806 41 | ..... | 187 55 | 475 21 |
| Int. and Deb. Payments | 5,463 85 | 8,855 45 | 11,281 56 | 9,721 64 | 10,337 35 | 13,269 15 |
| Miscellaneous Expenses | ..... | ..... | ..... | ..... | ..... | ..... |
| Total Expenses | 17,175 88 | 34,312 80 | 53,170 87 | 33,284 65 | 41,570 20 | 55,955 04 |
| Surplus | ..... | 601 66 | 8,030 26 | 11,949 08 | 19,425 73 | 13,766 11 |
| Loss | 721 47 | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | ..... | ..... | 3,307 80 | 8,400 00 | 10,600 00 | 10,000 00 |
| Surp. Less Depr. Chg. | 721 47 | 601 66 | 4,722 46 | 3,549 08 | 8,825 73 | 3,766 11 |

"m" 10 months' operation.
Italics denote losses.
xa, xf See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Galt xa 11,852 | Sarnia xa 11,676 | Niagara Falls xa 11,147 | Woodstock xb 10,084 | | | | Brockville xf 9,428 |
|---|---|---|---|---|---|---|---|
| 1916 | 1916 | 1916 | 1913 | 1914 | 1915 | 1916 | 1916 |
| | | h | | | | | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 19,961 17 | ..... | 21,733 29 | 6,495 02 | 8,807 40 | 10,472 14 | 11,206 71 | 12,897 12 |
| 10,485 26 | 17,498 81 | 13,259 02 | 12,942 32 | 11,610 14 | 11,718 95 | 12,983 32 | 21,994 02 |
| 36,029 78 | 12,640 12 | 9,613 91 | 20,262 52 | 19,832 26 | 20,742 18 | 23,721 92 | 15,828 62 |
| 12,567 40 | 3,480 00 | 12,849 81 | 7,160 00 | 7,320 00 | 7,810 08 | 7,355 01 | 9,000 60 |
| 45 00 | ..... | 9 84 | 354 18 | 471 80 | 673 97 | 1,360 65 | ..... |
| 79,088 61 | 33,618 90 | 57,465 87 | 47,214 04 | 48,041 60 | 51,417 32 | 56,627 61 | 59,719 76 |
| 41,098 16 | ..... | 15,391 75 | 18,798 66 | 18,690 30 | 20,217 74 | 24,747 98 | 8,754 44 |
| 2,774 79 | 9,289 42 | 3,516 04 | 1,834 83 | 2,149 53 | 1,817 22 | 1,924 83 | 14,304 71 |
| 89 72 | ..... | ..... | 497 39 | 83 02 | 108 46 | 33 08 | 2,878 57 |
| 1,795 06 | 642 75 | 4,272 18 | 1,827 65 | 1,566 91 | 1,654 10 | 2,068 72 | 1,955 01 |
| 15 55 | 4 00 | 197 54 | 4 84 | 23 75 | 74 94 | 128 08 | 17 59 |
| 185 80 | ..... | 560 67 | 70 75 | 57 05 | 24 82 | 313 11 | 219 29 |
| 160 76 | ..... | ..... | 345 00 | ..... | ..... | ..... | ..... |
| 2,620 53 | 137 26 | 3,959 08 | 1,142 30 | 1,665 72 | 584 03 | 502 77 | 494 27 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | 851 48 |
| 2,566 98 | ..... | 1,795 99 | 1,115 75 | 1,628 44 | 1,443 25 | 1,722 35 | 566 28 |
| 3,298 27 | 3,843 56 | 2,548 06 | 2,513 73 | 3,050 10 | 3,007 93 | 2,794 11 | 2,648 31 |
| 603 80 | 1,037 33 | 1,920 19 | 447 96 | 581 45 | 972 96 | 1,077 89 | 892 28 |
| 15,303 85 | 7,738 92 | 9,078 40 | 6,853 83 | 7,219 04 | 7,290 95 | 7,241 71 | 15,535 74 |
| ..... | ..... | ..... | ..... | 500 00 | 1,000 00 | b 1,000 00 | b 1,325 54 |
| 70,513 27 | 22,693 24 | 43,239 90 | 35,806 87 | 37,215 31 | 38,196 40 | 43,554 63 | 50,443 51 |
| 8,575 34 | 10,925 69 | 14,225 97 | 11,407 17 | 10,826 38 | 13,220 92 | 13,072 98 | 9,276 25 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 8,500 00 | ..... | 8,315 00 | 5,827 40 | 6,450 00 | 6,725 00 | 6,930 20 | 7,000 00 |
| 75 34 | 10,925 69 | 5,910 97 | 5,579 77 | 4,376 38 | 6,495 92 | 6,142 78 | 2,276 25 |

"b" Patriotic Fund contributions.
"h" 6 months' operation.
xa, xb, xf See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality / Population | Welland xa 7,243 | | | | Barrie xb 6,453 | | |
|---|---|---|---|---|---|---|---|
| —— | 1913 | 1914 | 1915 | 1916 | 1913 | 1914 | 1915 |
| | f | | | | | | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 1,369 67 | 4,411 20 | 4,643 16 | 4,800 06 | 10,071 55 | 11,149 49 | 11,087 68 |
| Commercial Light | 558 46 | 1,676 38 | 1,600 79 | 1,580 48 | 9,252 70 | 9,464 64 | 9,572 91 |
| Power | 4,307 21 | 8,305 71 | 38,541 88 | 78,184 81 | 3,393 45 | 3,712 24 | 4,567 76 |
| Street Light | 1,395 00 | 5,049 00 | 5,235 75 | 5,181 00 | 4,292 53 | 4,572 75 | 5,075 00 |
| Miscellaneous | ..... | ..... | 1,171 16 | 3,899 76 | 583 28 | 137 89 | 145 51 |
| Total | 7,630 34 | 19,442 29 | 51,192 74 | 93,646 11 | 27,593 51 | 29,037 01 | 30,448 86 |
| EXPENSES | | | | | | | |
| Power Purchased | 4,861 38 | 7,598 77 | 31,100 96 | 62,152 76 | 6,611 27 | 10,873 86 | 12,352 71 |
| Sub-Stn. Operation | 295 43 | 406 99 | 208 78 | 1,115 16 | 5,706 97 | 2,745 68 | 2,428 00 |
| " " Maint'ce. | ..... | 32 30 | 96 66 | 387 59 | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 191 18 | 138 94 | 590 33 | 841 42 | 679 16 | 448 87 | 1,008 10 |
| Line Transformer M't'c'e. | 32 82 | 107 53 | 318 22 | 1,010 32 | ..... | ..... | 58 50 |
| Meter Maintenance | 50 | 57 21 | 200 13 | 228 68 | 17 92 | ..... | 151 73 |
| Consumers' Premises-Ex. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | 123 82 | 446 23 | 192 52 | 156 28 | 402 06 | 108 02 | 675 44 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | 317 42 | 748 38 | 455 39 | 541 14 | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 798 53 | 2,790 59 | 3,720 01 | 5,431 25 | 3,578 67 | 2,294 92 | 2,567 43 |
| Undistributed Expenses | 39 45 | 10 25 | 420 97 | 624 60 | 544 58 | 510 67 | 1,174 97 |
| Int. and Deb. Payments | 2,638 54 | 5,080 20 | 8,474 79 | 8,199 77 | 5,590 40 | 6,052 29 | 6,052 29 |
| Miscellaneous Expenses | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total Expenses | 9,299 07 | 17,417 39 | 45,778 76 | 80,688 97 | 23,131 03 | 23,044 31 | 26,469 17 |
| Surplus | ..... | 2,024 90 | 5,413 98 | 12,957 14 | 4,462 48 | 5,992 70 | 3,979 69 |
| Loss | 1,668 73 | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | ..... | ..... | 4,425 00 | 4,000 00 | 3,350 00 | 3,500 00 | 3,500 00 |
| Surp. Less Depr. Chg. | *1,668 73* | 2,024 90 | 988 98 | 8,957 14 | 1,112 48 | 2,492 70 | 479 69 |

"f" 4 months' operation.
Italics denote losses.
xa, xb See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Barrie xb 6,453 | Collingwood xb 6,361 | | | | Midland xb 6,258 | | | |
|---|---|---|---|---|---|---|---|---|
| 1916 | 1913 | 1914 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 11,907 10 | 8,775 83 | 7,857 86 | 7,094 27 | 8,320 44 | 6,095 11 | 6,941 07 | 6,580 45 | 7,145 74 |
| 10,635 67 | 7,600 00 | 7,555 54 | 5,688 26 | 6,213 86 | 6,104 16 | 5,048 06 | 4,462 54 | 4,624 85 |
| 6,918 33 | 896 72 | 5,165 39 | 9,527 70 | 23,152 41 | 5,700 22 | 6,484 43 | 10,229 52 | 12,262 89 |
| 5,323 67 | 3,802 88 | 4,647 00 | 4,715 00 | 3,940 00 | 3,463 07 | 3,728 76 | 3,100 00 | 3,330 46 |
| 237 09 | 106 21 | ..... | ..... | 91 | ..... | 13 71 | 33 26 | 113 10 |
| 35,021 86 | 21,181 64 | 25,225 79 | 27,025 23 | 41,627 62 | 21,362 56 | 22,216 03 | 24,405 77 | 27,477 04 |
| 14,417 95 | 7,480 48 | 10,450 24 | 13,733 50 | 24,922 78 | 6,059 33 | 6,539 10 | 8,367 74 | 11,787 55 |
| 1,254 53 | 1,952 60 | 2 25 | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 10 51 | 3 97 | ..... | ..... | ..... | ..... | ..... |
| 182 06 | 1,374 21 | 749 16 | 530 27 | 493 42 | 989 11 | 1,284 29 | 1,104 58 | 981 34 |
| ..... | 9 19 | 36 83 | ..... | ..... | 57 20 | 420 06 | 122 60 | 35 34 |
| 1,039 54 | 13 37 | 15 25 | ..... | 98 44 | ..... | ..... | ..... | 605 31 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 506 46 | 133 20 | 664 19 | 477 36 | 382 60 | 526 53 | 1,020 22 | 1,020 86 | 961 47 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 252 08 | 302 39 | 526 63 | 816 33 | 221 04 | 157 39 | 282 69 | 494 20 |
| 2,560 26 | 2,066 94 | 1,916 97 | 1,988 80 | 1,988 08 | 1,435 86 | 1,692 75 | 2,088 31 | 1,771 67 |
| 726 93 | 209 90 | 173 18 | 128 76 | ..... | ..... | 107 63 | ..... | 175 46 |
| 6,052 29 | 4,277 77 | 4,369 96 | 3,556 84 | 3,393 33 | 4,134 55 | 4,267 05 | 3,827 60 | 3,955 47 |
| ..... | ..... | ..... | 250 00 | ..... | ..... | ..... | ..... | ..... |
| 26,740 02 | 17,769 94 | 18,690 93 | 21,196 13 | 32,094 98 | 13,423 62 | 15,488 49 | 16,814 39 | 20,767 81 |
| 8,281 84 | 3,411 70 | 5,534 86 | 5,829 10 | 9,532 64 | 7,938 94 | 6,727 54 | 7,591 39 | 6,709 23 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,575 00 | 2,390 00 | 2,400 00 | 2,600 00 | 2,150 00 | 2,950 00 | 3,200 00 | 3,400 00 | 3,100 00 |
| 5,706 84 | 1,021 70 | 4,134 86 | 3,229 10 | 7,382 64 | 4,988 94 | 3,527 54 | 4,191 39 | 3,609 23 |

xb See page 68.

## STATEMENT

### Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality / Population | Ingersoll xb 5,176 | | | | Walkerville xa 5,096 | |
|---|---|---|---|---|---|---|
| —— | 1913 | 1914 | 1915 | 1916 | 1914 | 1915 |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 3,595 03 | 5,085 82 | 5,480 52 | 6,857 94 | 337 96 | 12,640 03 |
| Commercial Light | 6,048 51 | 6,359 72 | 5,716 91 | 6,540 51 | 1,492 84 | 7,596 25 |
| Power | 15,293 44 | 12,818 27 | 16,251 18 | 20,380 90 | 6,042 11 | 38,580 74 |
| Street Light | 4,262 02 | 3,960 04 | 3,564 80 | 3,729 00 | 1,716 61 | 3,601 29 |
| Miscellaneous | 976 99 | 250 88 | 610 56 | 681 28 | ..... | 982 28 |
| Total | 30,176 00 | 28,474 73 | 31,623 97 | 38,189 63 | 12,289 52 | 63,400 59 |
| EXPENSES | | | | | | |
| Power Purchased | 11,966 61 | 11,441 79 | 16,994 84 | 20,236 43 | 6,104 53 | 45,503 27 |
| Sub-Stn. Operation | 828 83 | 907 02 | 852 02 | 1,144 36 | 259 76 | 1,425 79 |
| " " Maint'ce... | ..... | ..... | ..... | ..... | 1 75 | 39 86 |
| Dist. System, Operation and Maintenance | 422 13 | 535 79 | 446 05 | 1,219 74 | 502 81 | 1,132 37 |
| Line Transformer M't'c'e. | 187 39 | 113 54 | 277 77 | 47 31 | 3 00 | 163 19 |
| Meter Maintenance | 97 00 | 360 05 | 297 19 | 81 59 | 13 25 | 217 05 |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | 440 09 | 274 54 | 214 69 | 414 97 | 10 58 | 749 88 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | 560 15 | 543 73 | 668 26 | 834 79 | 562 05 | 2,039 70 |
| Gen. Office, Sal. and Exp. | 1,615 40 | 1,471 88 | 1,561 32 | 1,024 03 | 1,499 11 | 2,806 63 |
| Undistributed Expenses | 195 56 | 71 63 | 82 63 | 590 85 | 374 34 | 923 24 |
| Int. and Deb. Payments | 5,337 25 | 5,198 90 | 5,046 35 | 4,905 00 | 1,908 19 | 8,758 92 |
| Miscellaneous Expenses | ..... | ..... | ..... | ..... | ..... | ..... |
| Total Expenses | 21,650 41 | 20,918 87 | 26,441 12 | 30,499 07 | 11,239 37 | 63,759 90 |
| Surplus | 8,525 59 | 7,555 86 | 5,182 85 | 7,690 56 | 1,050 15 | ..... |
| Loss | ..... | ..... | ..... | ..... | ..... | 359 31 |
| Depreciation Charge | 2,862 00 | 3,168 00 | 3,200 00 | 2,650 00 | ..... | ..... |
| Surp. Less Depr. Chg. | 5,663 59 | 4,387 86 | 1,982 85 | 5,040 56 | 1,550 15 | *359 31* |

Italics denote losses.
xa xb See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Walkerville xa 5,096 | Waterloo xf 4,956 | | | | Goderich xb 4,655 | | |
|---|---|---|---|---|---|---|---|
| 1916 | 1913 | 1914 | 1915 | 1916 | 1914 | 1915 | 1916 |
| | p | | | | | | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 18,610 61 | 4,263 66 | 4,723 94 | 5,401 82 | 5,454 60 | 7,197 05 | 6,072 51 | 7,086 32 |
| 11.805 00 | 5,098 42 | 4,825 22 | 5,284 87 | 4,750 09 | 4,196 49 | 5,066 76 | 5,253 15 |
| 76,567 87 | 14,970 14 | 13,282 12 | 15,125 32 | 17,905 45 | 1,240 73 | 5,645 26 | 5,498 56 |
| 3,828 49 | 5,294 10 | 5,137 84 | 5,773 20 | 5,798 75 | 5,525 00 | 5,525 00 | 5,162 39 |
| 1,653 93 | ..... | 477 61 | 276 14 | 834 92 | ..... | ..... | 135 00 |
| 112,465 90 | 29,626 32 | 28,446 73 | 31,861 35 | 34,743 81 | 18,159 27 | 22,309 53 | 23,135 42 |
| 75,704 99 | 11,075 53 | 9,882 03 | 14,230 85 | 16,914 08 | 6,315 17 | 7,716 02 | 9,136 85 |
| 1,994 86 | 1,019 10 | 924 41 | 863 04 | 890 01 | 1,806 40 | 1,705 39 | 1,461 80 |
| 250 24 | 81 00 | 182 23 | 315 50 | 47 74 | ..... | ..... | ..... |
| 976 49 | 378 74 | 794 51 | 2,013 65 | 1,479 03 | 167 83 | 312 13 | 525 44 |
| 399 31 | 32 13 | 42 90 | 2 65 | 74 95 | 11 25 | 113 65 | 314 94 |
| 543 58 | 54 67 | 193 53 | 61 72 | 106 32 | 15 94 | 13 43 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,103 25 | 1,093 25 | 459 21 | 869 98 | 693 68 | 68 20 | 413 67 | 727 63 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,183 61 | 866 90 | 756 25 | 926 41 | 1,021 01 | 343 13 | 405 95 | 494 19 |
| 5,585 79 | 2,520 00 | 2,519 64 | 2,463 40 | 3,064 05 | 204 85 | 185 28 | 813 59 |
| 3,023 92 | 709 44 | 323 72 | 431 95 | 473 57 | 154 40 | 113 35 | 119 44 |
| 11,092 60 | 3,676 92 | 3,473 33 | 4,284 71 | 3,475 25 | 4,182 09 | 4,447 27 | 5,302 27 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 102,858 64 | 21,507 68 | 19,551 76 | 26,463 86 | 29,139 69 | 13,269 26 | 15,426 14 | 18,896 15 |
| 9,607 26 | 8,118 64 | 8,894 97 | 5,397 47 | 5,604 12 | 4,890 01 | 6,883 39 | 4,239 27 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3,773 06 | 3,100 00 | 3,500 00 | 4,000 00 | 3,700 00 | 2,920 00 | 3,750 00 | 2,600 00 |
| 5,834 20 | 5,018 64 | 5,394 97 | 1,397 49 | 1,904 12 | 1,970 01 | 3,133 39 | 1,639 27 |

"p" 13 months' operation.

xa xb, xf See page 68.

## STATEMENT

### Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality / Population | Dundas xb 4,652 | | | | Preston xb 4,643 | |
|---|---|---|---|---|---|---|
| —— | 1913 | 1914 | 1915 | 1916 | 1913 | 1914 |
| EARNINGS | | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 3,045 85 | 5,349 24 | 6,139 97 | 6,925 46 | 5,477 10 | 6,520 39 |
| Commercial Light | 4,193 27 | 4,198 64 | 4,310 96 | 4,714 78 | 5,366 77 | 5,011 15 |
| Power | 3,070 40 | 4,305 96 | 5,930 54 | 10,915 58 | 21,017 68 | 21,975 26 |
| Street Light | 60 10 | 3,050 85 | 3,460 35 | 3,547 73 | 2,594 55 | 2,778 48 |
| Miscellaneous | 930 81 | ..... | ..... | ..... | 232 47 | 98 53 |
| Total | 11,300 43 | 16,904 69 | 19,841 82 | 26,103 55 | 34,688 57 | 36,383 81 |
| EXPENSES | | | | | | |
| Power Purchased | 3,474 08 | 4,038 10 | 4,981 97 | 7,411 36 | 16,673 20 | 17,460 00 |
| Sub-Stn. Operation | ..... | ..... | 71 64 | 17 89 | 1,459 16 | 1,509 01 |
| " " Maint'ce... | ..... | ..... | ..... | ..... | 49 21 | 28 33 |
| Dist. System, Operation and Maintenance | 154 77 | 840 00 | 1,448 70 | 822 50 | 1,238 36 | 2,368 26 |
| Line Transformer M't'c'e. | 35 80 | 74 75 | 91 00 | 125 18 | 280 22 | 139 99 |
| Meter Maintenance | 4 40 | 31 18 | 61 42 | 36 86 | 79 67 | 86 01 |
| Consumers' Premises–Exp. | ..... | 84 68 | 28 54 | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | ..... | 285 34 | 378 76 | 369 73 | 431 92 | 523 05 |
| Promotion of Business | ..... | 789 93 | ..... | ..... | ..... | ..... |
| Billing and Collecting | 689 51 | 937 59 | 1,026 26 | 1,120 00 | 656 75 | 739 90 |
| Gen. Office, Sal. and Exp. | 1,642 56 | 1,876 50 | 1,905 51 | 1,732 83 | 415 98 | 568 69 |
| Undistributed Expenses | ..... | 138 32 | 898 42 | 1,467 23 | 183 85 | 585 82 |
| Int. and Deb. Payments | 1,970 14 | 4,504 12 | 5,706 69 | 5,565 39 | 4,120 54 | 7,300 84 |
| Total Expenses | 7,971 26 | 13,600 51 | 16,598 91 | 18,668 97 | 25,588 86 | 31,309 90 |
| Surplus | 3,329 17 | 3,304 18 | 3,242 91 | 7,434 58 | 9,099 71 | 5,073 91 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | 1,508 00 | 1,675 00 | 2,900 00 | 2,830 00 | 2,924 00 | 3,400 00 |
| Surp. Less Depr. Chg. | 1,821 17 | 1,629 18 | 342 91 | 4,604 58 | 6,175 71 | 1,673 91 |

xb See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Preston xb 4,643 | | Paris xb 4,370 | | | Wallaceburg xb 4,107 | |
|---|---|---|---|---|---|---|
| 1915 | 1916 | 1914 | 1915 | 1916 | 1915 | 1916 |
| | | | | | n | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 6,615 91 | 7,341 15 | 4,766 23 | 5,071 54 | 5,877 57 | 4,079 74 | 5,095 45 |
| 4,488 76 | 4,779 76 | 2,778 00 | 4,063 03 | 3,805 95 | 4,239 30 | 4,589 30 |
| 21,698 34 | 22,624 37 | 1,419 90 | 6,328 33 | 8,974 66 | 87 32 | 5,866 32 |
| 2,830 50 | 3,044 92 | 4,103 00 | 4,576 00 | 4,576 00 | 2,680 61 | 3,094 56 |
| 15 00 | ..... | ..... | ..... | ..... | ..... | ..... |
| 35,648 51 | 37,790 20 | 13,067 22 | 20,937 90 | 23,234 18 | 11,086 97 | 18,645 63 |
| 18,843 12 | 20,693 58 | 4,020 80 | 7,104 77 | 7,837 15 | 5,601 51 | 9,464 40 |
| 1,667 38 | 1,727 51 | 1,082 57 | 1,647 07 | 1,387 25 | ..... | 59 43 |
| 30 10 | 211 78 | ..... | ..... | ..... | ..... | ..... |
| 1,656 67 | 1,093 91 | 1,299 26 | 1,325 58 | 1,299 93 | 143 88 | 729 31 |
| 149 14 | 197 11 | 13 45 | 20 00 | ..... | ..... | ..... |
| 56 28 | 145 13 | ..... | 2 05 | 7 60 | ..... | 129 79 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 413 40 | 297 29 | 333 09 | 493 88 | 281 48 | 295 13 | 563 91 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 822 42 | 1,046 83 | ..... | ..... | 83 50 | ..... | ..... |
| 496 56 | 956 13 | 563 26 | 746 78 | 636 17 | 1,377 06 | 1,955 13 |
| 1,340 06 | 531 01 | 115 30 | 100 00 | 348 64 | ..... | 909 46 |
| 7,212 87 | 7,258 79 | 5,849 94 | 7,966 15 | 6,665 00 | 3,580 84 | 3,701 50 |
| 32,688 00 | 34,159 07 | 13,277 67 | 19,406 28 | 18,546 72 | 10,998 42 | 17,512 93 |
| 2,960 51 | 3,631 13 | ..... | 632 62 | 4,687 46 | 88 85 | 1,132 70 |
| ..... | ..... | 210 45 | ..... | ..... | ..... | ..... |
| 3,800 00 | 3,500 00 | ..... | ..... | 2,000 00 | ..... | 1,038 00 |
| *839 49* | 131 13 | *210 45* | 632 62 | 2,687 46 | 88 85 | 94 70 |

"n" 11 months' operation.
Italics denote losses.
xb See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | Simcoe xa | | Brampton xb | | | |
|---|---|---|---|---|---|---|
| Population | 4,061 | | 4,041 | | | |
| —— | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 |
| | 1 | | | | | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 351 67 | 857 61 | 5,617 61 | 6,798 89 | 6,860 48 | 6,660 66 |
| Commercial Light | 1,386 89 | 2,292 28 | 3,983 65 | 4,055 99 | 4,053 56 | 4,013 51 |
| Power | 766 42 | 1,386 33 | 10,557 72 | 10,658 33 | 11,624 83 | 12,922 72 |
| Street Light | 2,708 51 | 3,500 00 | 3,500 00 | 4,200 00 | 4,486 00 | 4,262 17 |
| Miscellaneous | 12 80 | 128 99 | ..... | ..... | 62 71 | 269 05 |
| Total | 5,226 29 | 8,165 21 | 23,661 98 | 25,713 21 | 27,087 58 | 28,128 11 |
| EXPENSES | | | | | | |
| Power Purchased | 2,438 62 | 3,531 25 | 11,084 34 | 11,692 39 | 13,259 58 | 14,489 32 |
| Sub-Stn. Operation | ..... | 4 70 | 26 11 | 58 58 | 30 95 | 25 68 |
| " " Maint'ce. | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 3 70 | 40 48 | 231 54 | 522 54 | 1,032 33 | 954 36 |
| Line Transformer M't'c'e. | ..... | 26 37 | 16 00 | 197 15 | 150 45 | ..... |
| Meter Maintenance | ..... | 12 10 | ..... | 51 31 | 13 15 | 38 42 |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | 19 81 | 59 45 | 168 79 | 429 60 | 282 72 | 191 62 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | 341 70 | 794 57 | 871 46 | 935 76 |
| Gen. Office, Sal. and Exp. | 441 53 | 1,020 71 | 1,694 67 | 1,904 94 | 1,854 65 | 1,744 33 |
| Undistributed Expenses | 232 50 | 124 65 | 371 28 | 66 47 | 28 12 | 147 14 |
| Int. and Deb. Payments | 1,473 94 | 1,948 91 | 3,781 42 | 4,936 36 | 4,799 34 | 4,739 19 |
| Total Expenses | 4,610 10 | 6,768 62 | 17,716 05 | 20,653 91 | 22,322 75 | 23,265 82 |
| Surplus | 616 19 | 1,396 59 | 5,945 93 | 5,059 30 | 4,764 83 | 4,862 29 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | ..... | 1,350 00 | 2,500 00 | 3,000 00 | 3,000 00 | 3,000 00 |
| Surp. Less Depr. Chg. | 616 19 | 46 59 | 3,445 93 | 2,059 30 | 1,764 83 | 1,862 29 |

"1" 9 months' operation.
xa, xb See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| St. Marys xb 3,958 | | | | Penetanguishene xb 3,928 | | | | Petrolia 3,891 xa |
|---|---|---|---|---|---|---|---|---|
| 1913 | 1914 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 | 1916 |
| | | | | | | | | j |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 3,815 77 | 4,614 95 | 5,073 97 | 5,020 33 | 1,989 80 | 1,936 73 | 2,050 69 | 2,314 37 | 1,598 03 |
| 4,553 73 | 4,733 33 | 4,222 53 | 3,161 26 | 4,511 16 | 3,064 83 | 2,676 60 | 2,706 74 | 1,840 35 |
| 8,221 72 | 10,610 05 | 8,379 87 | 9,266 74 | 8,775 95 | 8,001 69 | 10,048 08 | 11,650 03 | 356 67 |
| 3,582 00 | 3,441 00 | 3,850 00 | 5,390 33 | 2,042 00 | 2,016 00 | 2,095 00 | 2,095 00 | 2,074 32 |
| ..... | ..... | 178 00 | ..... | ..... | ..... | 148 35 | 17 70 | 195 95 |
| 20,173 22 | 23,399 33 | 21,704 37 | 22,838 66 | 17,318 91 | 15,019 25 | 17,018 72 | 18,783 84 | 6,065 32 |
| 10,055 82 | 8,966 67 | 9,040 90 | 10,411 47 | 6,347 56 | 7,673 95 | 9,935 27 | 11,954 10 | 2,818 60 |
| 728 39 | 803 25 | 729 98 | 784 83 | 967 84 | 725 24 | 734 23 | 742 17 | ..... |
| 150 46 | 195 00 | ..... | 100 67 | ..... | 3 25 | 1 66 | ..... | ..... |
| 556 05 | 400 29 | 582 11 | 475 54 | 301 41 | 166 21 | 92 25 | 78 45 | ..... |
| 519 39 | 350 34 | 136 96 | 245 73 | 236 11 | 93 51 | 1 00 | 7 70 | ..... |
| 202 56 | 175 22 | 102 77 | 196 43 | ..... | 178 86 | 27 60 | 182 69 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 554 36 | 423 60 | 502 85 | 640 39 | 144 56 | 335 99 | 373 93 | 220 76 | 143 29 |
| ..... | ..... | ..... | ..... | ..... | 131 74 | 58 88 | ..... | ..... |
| 263 21 | 257 03 | 296 57 | 238 61 | 44 45 | 133 00 | 227 56 | 196 25 | ..... |
| 1,077 38 | 994 13 | 1,143 40 | 964 08 | 1,278 02 | 1,305 25 | 1,303 05 | 1,260 29 | 1,422 41 |
| 75 63 | 138 54 | 72 80 | 528 22 | ..... | 3 00 | ..... | 216 66 | ..... |
| 4,616 15 | 4,658 00 | 4,775 42 | 4,775 42 | 2,035 90 | 1,986 09 | 1,981 39 | 2,050 40 | 1,486 24 |
| 18,799 40 | 17,362 07 | 16,507 87 | 19,361 39 | 11,355 85 | 12,736 09 | 14,736 82 | 16,909 47 | 5,994 49 |
| 1,373 82 | 6,037 26 | 4,320 61 | 3,477 27 | 5,963 06 | 2,283 16 | 2,281 90 | 1,874 37 | 70 83 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 3,340 00 | 3,600 00 | 2,900 00 | 1,820 00 | 1,960 00 | 2,000 00 | 1,780 00 | ..... |
| 1,373 82 | 2,697 26 | 720 61 | 577 27 | 4,143 06 | 323 16 | 281 90 | 94 37 | 70 83 |

"j" 7 months' operation.
xa, xb See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality / Population | Tillsonburg xb 3,084 | | | | Strathroy xb 2,998 | |
|---|---|---|---|---|---|---|
| —— | 1913 | 1914 | 1915 | 1916 | 1915 | 1916 |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 2,796 57 | 3,367 74 | 3,203 51 | 4,009 67 | 3,380 78 | 3,318 45 |
| Commercial Light | 4,677 38 | 4,579 37 | 4,236 42 | 4,493 51 | 4,701 76 | 3,817 38 |
| Power | 4,763 13 | 6,303 09 | 5,619 15 | 5,692 05 | 700 49 | 2,927 36 |
| Street Light | 2,601 00 | 2,463 96 | 2,507 81 | 2,595 96 | 4,221 76 | 4,654 59 |
| Miscellaneous | 1,163 11 | 863 28 | 667 61 | 436 69 | ..... | 368 88 |
| Total | 16,001 19 | 17,577 44 | 16,234 50 | 17,227 88 | 13,004 79 | 15,086 66 |
| EXPENSES | | | | | | |
| Power Purchased | 6,249 35 | 6,999 79 | 7,248 93 | 7,761 57 | 5,541 40 | 7,507 66 |
| Sub-Stn. Operation | 950 05 | 753 91 | 713 91 | 750 71 | ..... | ..... |
| " " Maint'ce. | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 332 50 | 570 90 | 471 99 | 333 93 | 78 62 | 75 14 |
| Line Transformer M't'c'e. | 4 89 | 11 55 | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | 16 47 | 4 40 | 19 68 | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | 205 87 | 210 50 | 309 17 | 161 04 | 160 10 | 187 91 |
| Promotion of Business | ..... | ..... | 43 29 | 36 95 | ..... | ..... |
| Billing and Collecting | 907 04 | 923 46 | 1,003 63 | 993 63 | ..... | ..... |
| Gen. Office, Sal. and Exp. | 1,064 21 | 997 04 | 1,306 50 | 1,654 61 | 1,353 44 | 1,898 60 |
| Undistributed Expenses | 1,033 61 | 1,000 00 | ..... | 50 38 | ..... | ..... |
| Int. and Deb. Payments | 2,137 07 | 2,727 41 | 2,674 75 | 2,594 83 | 2,719 74 | 2,188 26 |
| Total Expenses | 12,884 59 | 14,211 21 | 13,776 57 | 14,357 33 | 9,853 30 | 11,857 57 |
| Surplus | 3,116 60 | 3,366 23 | 2,457 93 | 2,870 55 | 3,151 49 | 3,229 09 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | 1,782 75 | 1,830 00 | 1,875 00 | 1,600 00 | 1,500 00 | 1,050 00 |
| Surp. Less Depr. Chg. | 1,333 85 | 1,536 23 | 582 93 | 1,270 55 | 1,651 49 | 2,179 09 |

xb See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| xb | Hespeler 2,740 | | | xb | Prescott 2,740 | | | Orangeville 2,493 xa |
|---|---|---|---|---|---|---|---|---|
| 1913 | 1914 | 1915 | 1916 | 1914 | 1915 | 1916 | 1916 |
| | | | | | | | g |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 2,206 75 | 2,635 41 | 2,787 48 | 3,011 73 | 7,472 75 | 4,058 14 | 4,186 96 | 613 08 |
| 1,667 00 | 1,934 75 | 2,334 15 | 2,012 28 | 996 00 | 3,033 62 | 3,611 95 | 722 87 |
| 5,044 30 | 6,116 27 | 9,017 58 | 11,177 71 | 1,099 27 | 3,431 45 | 4,141 90 | 866 11 |
| 1,500 00 | 1,478 00 | 1,536 00 | 1,831 80 | 2,500 00 | 2,500 00 | 2,500 00 | 760 00 |
| ..... | ..... | ..... | ..... | 9 00 | ..... | 117 39 | 127 27 |
| 10,418 05 | 12,164 43 | 15,675 21 | 18,033 52 | 12,077 02 | 13,023 21 | 14,558 20 | 3,089 33 |
| 5,465 01 | 4,753 26 | 6,663 89 | 9,755 25 | 5,047 30 | 4,552 99 | 4,603 77 | 1,379 12 |
| 2,101 87 | 614 43 | 413 06 | 839 98 | 3,293 49 | 1,147 65 | 2,317 58 | ..... |
| ..... | ..... | ..... | ..... | 361 49 | 805 14 | 47 63 | ..... |
| 638 83 | 565 16 | 431 37 | 626 62 | 767 49 | 929 36 | 1,247 01 | 39 40 |
| 4 17 | 54 05 | 52 76 | ..... | ..... | 34 00 | ..... | ..... |
| ..... | ..... | ..... | 147 22 | 116 10 | 146 70 | 27 80 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 57 50 | 111 92 | 139 02 | 165 66 | 119 00 | 210 22 | 520 60 | 64 72 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | 37 82 | 81 94 | 22 17 | ..... |
| 735 23 | 1,207 23 | 481 99 | 1,367 10 | 1,165 23 | 1,503 78 | 1,538 89 | 750 53 |
| 272 67 | 112 50 | 112 50 | 137 50 | 169 62 | 260 23 | 166 90 | ..... |
| 2,140 19 | 3,144 33 | 3,144 33 | 3,144 34 | 1,722 31 | 2,233 12 | 1,983 39 | 610 88 |
| 11,415 47 | 10,562 88 | 12,438 82 | 16,183 67 | 12,799 85 | 11,905 13 | 12,475 74 | 2,844 65 |
| ..... | 1,601 55 | 3,236 29 | 1,849 85 | ..... | 1,118 08 | 2,082 46 | 244 68 |
| 997 42 | ..... | ..... | ..... | 700 06 | ..... | ..... | ..... |
| ..... | 1,350 00 | 1,400 00 | 1,075 00 | 1,950 00 | 2,000 00 | 1,880 00 | ..... |
| ..... | 251 55 | 1,836 29 | 774 85 | *2,650 06* | *881 92* | 202 46 | 244 68 |

"g" 5 months' operation.
Italics denote losses.
xa, xb See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | Listowel | Ridgetown | xb | Elmira | | | Clinton |
|---|---|---|---|---|---|---|---|
| Population | 2,326 xb | 2,329 xa | | 2,270 | | | 2,177 xb |
| —— | 1916 | 1916 | 1914 | 1915 | 1916 | | 1914 |
| | z | | p | | | | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | | $ c. |
| Domestic Light | *7,696 19 | 2,173 64 | 1,968 41 | 2,059 11 | 2,211 16 | | 2,023 70 |
| Commercial Light | ..... | 2,838 32 | 2,020 81 | 1,674 44 | 1,665 69 | | 2,028 08 |
| Power | 605 03 | 740 86 | 1,876 49 | 2,801 33 | 2,635 22 | | 1,255 33 |
| Street Light | 2,163 16 | 2,853 00 | 1,680 00 | 1,680 00 | 1,740 00 | | 1,105 66 |
| Miscellaneous | ..... | 390 90 | ..... | 3 75 | 18 24 | | ..... |
| Total | 10,464 38 | 8,999 72 | 7,545 71 | 8,218 63 | 8,270 31 | | 6,412 77 |
| EXPENSES | | | | | | | |
| Power Purchased | 2,010 78 | 3,950 44 | 3,077 56 | 3,361 63 | 3,494 69 | | 2,291 20 |
| Sub-Stn. Operation | 2,121 60 | ..... | ..... | ..... | ..... | | 911 74 |
| " " Maint'ce.. | ..... | ..... | ..... | ..... | ..... | | ..... |
| Dist. System, Operation and Maintenance | 351 71 | 215 56 | ..... | ..... | ..... | | 80 99 |
| Line Transformer M't'c'e | ..... | ..... | ..... | ..... | ..... | | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | | ..... |
| Street Light Sys., Operation and Maintenance.. | 73 29 | 23 27 | 102 55 | 83 64 | 148 96 | | 145 74 |
| Promotion of Business .. | ..... | ..... | ..... | ..... | ..... | | ..... |
| Billing and Collecting ... | ..... | ..... | ..... | ..... | ..... | | ..... |
| Gen. Office, Sal. and Exp.. | 2,569 12 | 1,114 21 | 1,170 47 | 1,090 84 | 1,122 04 | | 1,182 42 |
| Undistributed Expenses .. | ..... | ..... | 31 17 | ..... | ..... | | 32 29 |
| Int. and Deb. Payments.. | 2,928 48 | 1,840 86 | 1,425 22 | 1,356 67 | 1,377 58 | | 1,838 56 |
| Total Expenses | 10,054 98 | 7,144 34 | 5,806 97 | 5,892 78 | 6,143 27 | | 6,483 14 |
| Surplus | 409 40 | 1,855 38 | 1,738 74 | 2,325 85 | 2,127 04 | | ..... |
| Loss | ..... | ..... | ..... | ..... | ..... | | 70 37 |
| Depreciation Charge . | ..... | 425 00 | 650 00 | 750 00 | 620 00 | | ..... |
| Surp. Less Depr. Chg. | 409 40 | 1,430 38 | 1,088 74 | 1,575 85 | 1,507 04 | | *70 37* |

* Domestic and Commercial not separable.
"b" 13 months' operation.
"z" 6 months Hydro; 6 months steam.
Italics denote losses.
xa, xb See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Clinton xb 2,177 | | Weston xb 2,156 | | | | Milton xa 2,072 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1913 | 1914 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 2,930 57 | 3,161 29 | 4,117 20 | 3,741 84 | 4,407 36 | 5,477 65 | 1,149 28 | 1,961 22 | 1,981 80 | 2,219 28 |
| 3,068 63 | 3,064 37 | 1,475 74 | 1,599 97 | 1,305 90 | 1,407 31 | 1,212 26 | 2,226 80 | 1,900 98 | 1,892 21 |
| 2,108 24 | 2,498 64 | 6,170 36 | 4,958 59 | 4,798 33 | 5,202 84 | 6,462 38 | 11,325 61 | 5,364 29 | 10,428 79 |
| 1,630 40 | 1,650 00 | 2,052 00 | 3,067 50 | 2,684 67 | 3,692 00 | 900 00 | 1,350 00 | 1,575 00 | 2,013 20 |
| 118 31 | 273 61 | 24 88 | ..... | 31 79 | 17 55 | 143 18 | 455 62 | ..... | 262 42 |
| 9,856 15 | 10,647 91 | 13,840 18 | 13,367 90 | 14,228 05 | 15,797 35 | 9,867 10 | 17,319 25 | 10,822 07 | 16,815 90 |
| 3,835 94 | 4,190 07 | 5,159 49 | 5,783 87 | 5,536 71 | 6,121 26 | 4,902 34 | 7,696 45 | 6,511 50 | 9,332 39 |
| 911 51 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 146 80 | 298 77 | 791 77 | 662 71 | 1,181 11 | 1,001 17 | 167 82 | 609 66 | 513 70 | 731 07 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 417 42 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 298 61 | 106 26 | 574 25 | 451 99 | 419 20 | 189.66 | ..... | 86 16 | 169 82 | 50 65 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,569 57 | 1,323 31 | 927 35 | 1,668 62 | 1,264 78 | 1,428 12 | 42 27 | 572 05 | 819 70 | 889 31 |
| ..... | ..... | 79 50 | 76 17 | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,643 15 | 3,089 21 | 1,588 48 | 1,588 42 | 2,310 20 | 2,096 09 | 1,582 93 | 2,277 04 | 2,270 34 | 2,178 67 |
| 9,405 58 | 9,007 62 | 9,120 84 | 10,231 78 | 10,712 00 | 10,836 30 | 6,695 36 | 11,241 36 | 10,285 06 | 13,599 51 |
| 450 57 | 1,640 29 | 4,719 34 | 3,136 12 | 3,516 05 | 4,961 05 | 3,171 74 | 6,077 89 | 537 01 | 3,216 39 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 380 20 | 1,200 00 | 1,390 00 | 1,450 00 | 1,520 00 | 1,600 00 | 900 00 | 1,250 00 | 1,090 00 | 900 00 |
| 70 37 | 440 29 | 3,329 34 | 1,686 12 | 1,996 05 | 3,361 05 | 2,271 74 | 4,827 89 | *552 99* | 2,316 39 |

Italics denote losses.

xa, xb See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | Mimico xa | | | | Chesley | Seaforth xh | |
|---|---|---|---|---|---|---|---|
| Population | 1,976 | | | | 1,975 xa | 1,964 | |
| —— | 1913 | 1914 | 1915 | 1916 | 1916 | 1913 | 1914 |
| | | | † | † | g | | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 2,021 06 | 5,085 16 | 5,748 44 | 7,011 08 | 1,881 23 | 2,124 18 | 2,467 36 |
| Commercial Light | * | * | 346 49 | 506 44 | * | 2,876 47 | 2,581 30 |
| Power | 795 49 | 963 64 | 1,042 11 | 1,449 14 | 135 61 | 7,509 99 | 7,707 01 |
| Street Light | 987 00 | 1,049 34 | 2,015 66 | 2,496 75 | 521 65 | 1,815 81 | 1,869 96 |
| Miscellaneous | ..... | ..... | ..... | 52 23 | 49 89 | 61 63 | 110 14 |
| Total | 3,803 55 | 7,098 14 | 9,152 70 | 11,515 64 | 2,588 38 | 14,388 08 | 14,735 77 |
| EXPENSES | | | | | | | |
| Power Purchased | 1,740 66 | 2,801 90 | 3,342 50 | 4,217 02 | 1,332 68 | 7,931 55 | 8,646 18 |
| Sub-Stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 144 79 | 53 29 | 167 16 | 698 69 | 25 98 | 1,573 93 | 1,078 00 |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | 23 89 | 88 85 | 148 80 | 253 82 | 23 38 | 317 37 | 638 57 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 265 61 | 674 73 | 892 39 | 1,098 29 | 130 59 | 368 67 | 529 05 |
| Undistributed Expenses | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments | 845 02 | 1,561 45 | 2,300 32 | 2,580 10 | 482 05 | 1,653 65 | 1,704 25 |
| Total Expenses | 3,019 97 | 5,180 22 | 6,851 17 | 8,847 92 | 1,994 68 | 11 845 17 | 12,596 05 |
| Surplus | 783 58 | 1,917 92 | 2,301 53 | 2,667 72 | 593 70 | 2,542 9 1 | 2,139 72 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | 740 00 | 920 00 | 1,200 00 | 1,000 00 | ..... | 1,300 00 | 1,400 00 |
| Surp. Less Depr. Chg. | 43 58 | 997 92 | 1,101 53 | 1,667 72 | 593 70 | 1,242 91 | 739 72 |

* Domestic and Commercial not separable.
† Domestic includes Rural Revenue.
"g" 5 months' operation.
xa, xh See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| xh Seaforth 1,964 | | Mount Forest 1,941 xb | xa Georgetown 1,905 | | | | xh Fergus 1,776 | |
|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1916 | 1913 | 1914 | 1915 | 1916 | 1915 | 1916 |
| | | | f | | | | p | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 2,593 70 | 3,045 65 | 1,967 03 | 661 49 | 3,069 02 | 2,999 83 | 3,174 63 | 1,314 03 | 1,621 27 |
| 2,724 84 | 2,941 03 | 2,420 75 | 842 87 | 2,362 33 | 2,276 41 | 2,101 00 | 2,367 91 | 2,111 16 |
| 7,685 52 | 9,684 11 | 1,739 79 | 234 32 | 2,976 61 | 8,734 01 | 10,726 24 | 882 24 | 2,819 21 |
| 1,869 96 | 1,869 96 | 1,963 00 | 541 67 | 1,843 67 | 1,834 03 | 1,724 17 | 1,744 75 | 1,575 00 |
| 143 53 | 88 39 | 523 01 | ..... | ..... | 130 53 | 369 40 | 99 65 | 91 31 |
| 15,017 55 | 17,629 14 | 8,613 58 | 2,280 35 | 10251 63 | 15,974 81 | 18,095 44 | 6,408 58 | 8,217 95 |
| 9,305 22 | 11,625 46 | 3,544 42 | 759 00 | 4,183 72 | 8,893 20 | 9,790 20 | 2,598 37 | 3,382 69 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 891 49 | 1,170 86 | 969 92 | 12 85 | 192 11 | 137 03 | 290 19 | 23 77 | 123 40 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 314 55 | 228 17 | 74 92 | 201 06 | 128 09 | 192 12 | 259 17 | 97 28 | 132 70 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 548 30 | 559 54 | 315 09 | ..... | 895 46 | 955 08 | 1,102 70 | 1,208 84 | 681 81 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,662 37 | 1,695 75 | 1,622 33 | ..... | 1,466 55 | 1,929 67 | 1,963 05 | 967 76 | 1,148 74 |
| 12,721 93 | 15,279 78 | 6,526 68 | 972 91 | 6,865 93 | 12,107 10 | 13,405 31 | 4,896 01 | 5,469 34 |
| 2,295 62 | 2,349 36 | 2,086 90 | 1,307 44 | 3,385 70 | 3,867 71 | 4,690 13 | 1,512 57 | 2,748 61 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,450 00 | 1,225 00 | 615 00 | 300 00 | 850 00 | 1,280 00 | 1,210 00 | 650 00 | 500 00 |
| 845 62 | 1,124 36 | 1,471 90 | 1,007 44 | 2,535 70 | 2,587 71 | 3,480 13 | 862 57 | 2,248 61 |

"f" 4 months' operation.
"p" 13 months' operation.
xa, xb, xh See page 68.

## STATEMENT

### Comparative Detailed Operative Reports of Electric Developments of Hydro

| Municipality | Palmerston | Tilbury xa | | Acton xa | | | |
|---|---|---|---|---|---|---|---|
| Population | 1,843 xb | 1,740 | | 1,735 | | | |
| —— | 1916 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 |
| EARNINGS | y | k | | | | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 6,102 25 | 979 57 | 1,507 37 | 1,236 50 | 1,463 72 | 1,931 11 | 1,942 11 |
| Commercial Light | * | 1,476 53 | 2,071 77 | 1,567 48 | 1,496 18 | 1,725 73 | 1,592 62 |
| Power | 282 57 | ..... | 149 60 | 318 77 | 836 13 | 1,019 27 | 1,565 53 |
| Street Light | 1,542 33 | 715 00 | 938 73 | 1,000 00 | 1,563 00 | 1,555 00 | 1,497 50 |
| Miscellaneous | ..... | 19 39 | 12 85 | 286 72 | 83 60 | 188 76 | 136 31 |
| Total | 7,927 15 | 3,190 49 | 4,680 32 | 4,409 47 | 5,442 63 | 6,419 87 | 6,734 07 |
| EXPENSES | | | | | | | |
| Power Purchased | 1,480 74 | 1,601 33 | 2,267 40 | 1,801 50 | 2,344 50 | 2,495 70 | 2,500 20 |
| Sub-Stn. Operation | 1,133 63 | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 66 02 | ..... | 12 09 | 371 97 | 35 42 | 78 52 | 63 88 |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | 44 00 | 10 60 | 23 10 | 7 20 | 147 12 | 144 16 | 112 23 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 1,044 29 | 643 64 | 1,054 03 | 841 70 | 943 77 | 667 70 | 999 19 |
| Undistributed Expenses | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments | 1,840 00 | 668 57 | 864 00 | 442 00 | 1,124 06 | 1,124 06 | 1,101 41 |
| Total Expenses | 5,608 68 | 2,924 14 | 4,220 62 | 3,584 37 | 4,594 87 | 4,510 14 | 4,776 91 |
| Surplus | 2,318 47 | 266 35 | 459 70 | 825 10 | 847 76 | 1,909 73 | 1,957 16 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | 295 00 | ..... | 275 00 | 500 00 | 500 00 | 500 00 | 500 00 |
| Surp. Less Depr. Chg. | 2,023 47 | 266 35 | 184 70 | 325 10 | 347 76 | 1,409 73 | 1,457 16 |

* Domestic and Commercial not separable.
"k" 8 months' operation.
"y" 5 months Hydro; 7 months steam.
xa, xb See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Gravenhurst 1,702 xh | Mitchell xh 1,687 | | | | Durham 1,600 xb | Exeter 1,572 xh | Dresden xb 1,521 | |
|---|---|---|---|---|---|---|---|---|
| 1916 | 1913 | 1914 | 1915 | 1916 | 1916 | 1916 | 1915 | 1916 |
| | | | | | | h | k | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 3,553 06 | 2,424 59 | 2,470 29 | 2,379 58 | 2,311 80 | 1,518 72 | 727 88 | 1,093 68 | 1,995 51 |
| 4,575 10 | 2,813 92 | 2,712 55 | 2,684 01 | 2,677 35 | 1,057 33 | 677 73 | 1,223 25 | 1,986 21 |
| 2,469 19 | 6,160 53 | 3,944 91 | 2,333 08 | 3,231 56 | ..... | 361 73 | ..... | ..... |
| 1,172 49 | 1,675 00 | 1,950 00 | 2,100 00 | 2,100 00 | 1,068 00 | 1,473 88 | 1,100 00 | 1,650 00 |
| ..... | 385 50 | 443 90 | 63 20 | 9 74 | ..... | 50 78 | 153 51 | 286 29 |
| 11,769 84 | 13,459 54 | 11,521 65 | 9,559 87 | 10,330 45 | 3,644 05 | 3,292 00 | 3,570 44 | 5,918 01 |
| 2,470 59 | 6,858 86 | 4,882 39 | 4,424 38 | 4,966 61 | 2,005 89 | 1,477 19 | 1,917 34 | 2,685 88 |
| ..... | 12 35 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 1,252 54 | 81 25 | 66 52 | 486 96 | 201 04 | 254 48 | 23 04 | 25 82 | 40 62 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 50 72 | 44 64 | 34 12 | 26 10 | 38 40 | 43 50 | 21 65 | 11 24 | 124 30 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,156 21 | 1,223 80 | 1,315 10 | 1,258 61 | 2,004 69 | 166 31 | 567 86 | 729 57 | 1,259 82 |
| ..... | 100 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3,483 41 | 2,224 07 | 2,224 06 | 2,124 46 | 1,808 33 | 1,277 28 | 665 47 | 754 98 | 1,492 65 |
| 9,413 47 | 10,544 97 | 8,522 19 | 8,320 51 | 9,019 07 | 3,747 46 | 2,755 21 | 3,438 95 | 5,603 27 |
| 2,356 37 | 2,914 57 | 2,999 46 | 1,239 36 | 1,311 38 | ..... | 536 79 | 131 49 | 314 74 |
| ..... | ..... | ..... | ..... | ..... | 103 41 | ..... | ..... | ..... |
| 1,650 00 | 1,150 00 | 1,200 00 | 1,000 00 | 1,000 00 | ..... | ..... | ..... | 314 74 |
| 706 37 | 1,764 57 | 1,799 46 | 239 36 | 311 38 | *103 41* | 536 79 | 131 49 | 000 00 |

"h" 6 months' operation.
"k" 8 months' operation.
Italics denote losses.
xb, xh See page 68.

## STATEMENT

### Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | New Hamburg xh | | | | Victoria Harbor | | Blenheim |
|---|---|---|---|---|---|---|---|
| Population | 1,543 | | | | 1,477 xh | | 1,424 xh |
| —— | 1913 | 1914 | 1915 | 1916 | 1915 | 1916 | 1916 |
| | | | | | e | | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 1,589 21 | 1,779 90 | 1,888 04 | 1,816 44 | 105 79 | 642 29 | 2,231 76 |
| Commercial Light | 1,890 72 | 1,403 56 | 1,273 38 | 1,211 25 | 117 85 | 1,171 37 | 2,356 37 |
| Power | 5,792 20 | 5,209 51 | 2,825 57 | 1,646 90 | ..... | ..... | ..... |
| Street Light | 1,827 00 | 1,827 00 | 1,827 00 | 1,827 00 | 141 00 | 720 00 | 2,536 00 |
| Miscellaneous | 325 44 | ..... | 351 77 | 400 90 | ..... | ..... | 31 78 |
| Total | 11,424 57 | 10,219 97 | 8,165 76 | 6,902 49 | 364 64 | 2,533 66 | 7,155 91 |
| EXPENSES | | | | | | | |
| Power Purchased | 5,206 00 | 4,770 26 | 3,144 80 | 2,934 14 | 172 82 | 954 00 | 3,326 29 |
| Sub-Stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 323 40 | 380 19 | 469 01 | 480 61 | 17 89 | 51 45 | 76 54 |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance.. | ..... | ..... | 177 00 | 101 98 | ..... | 55 40 | 165 98 |
| Promotion of Business .. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp.. | 1,194 68 | 995 47 | 1,055 70 | 1,056 52 | 30 00 | 157 26 | 684 53 |
| Undistributed Expenses .. | ..... | 107 21 | ..... | ..... | ..... | ..... | 18 48 |
| Int. and Deb. Payments.. | 1,170 92 | 1,172 91 | 1,303 57 | 1,170 92 | ..... | 497 96 | 897 08 |
| Total Expenses | 7,895 00 | 7,426 04 | 6,150 08 | 5,744 17 | 220 71 | 1,716 07 | 5,168 90 |
| Surplus | 3,529 57 | 2,793 93 | 2,015 68 | 1,158 32 | 143 93 | 817 59 | 1,987 01 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | 900 00 | 900 00 | 900 00 | 830 00 | ..... | 190 00 | 440 00 |
| Surp. Less Depr. Chg. | 2,629 57 | 1,893 93 | 1,115 68 | 328 32 | 143 93 | 627 59 | 1,547 01 |

"e" 3 months' operation.

xh See page 68.

" C "—Continued

Municipalities for the years ending 31st December, 1913, 1914, 1915 and 1916

| Harriston 1,404 xb | Port Dalhousie xa 1,318 | | | | Caledonia xh 1,217 | | | |
|---|---|---|---|---|---|---|---|---|
| 1916 | 1913 | 1914 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 |
| y | | | | | | | | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 2,967 86 | 3,742 54 | 3,656 01 | 3,608 70 | 2,868 05 | 404 60 | 880 54 | 265 62 | 263 39 |
| * | * | * | * | 782 99 | * | * | 950 38 | 777 38 |
| 366 79 | 347 28 | 429 54 | 252 12 | 339 12 | 470 34 | 188 54 | 138 42 | 519 82 |
| 1,253 25 | 1,246 67 | 880 00 | 968 00 | 850 00 | 584 00 | 780 00 | 808 00 | 760 00 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 4,587 90 | 5,336 49 | 4,965 55 | 4,828 82 | 4,840 16 | 1,458 94 | 1,849 08 | 2,162 42 | 2,320 59 |
| 1,191 50 | 2,393 00 | 2,407 20 | 2,415 28 | 1,911 14 | 766 70 | 669 00 | 793 00 | 917 00 |
| 1,026 97 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 254 98 | 253 81 | 421 83 | 225 52 | 600 76 | 23 05 | 92 95 | 53 58 | 91 65 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 77 28 | 8 74 | 65 28 | 25 75 | 54 90 | ..... | 35 80 | 22 28 | 22 65 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 205 45 | 302 30 | 712 50 | 1,014 54 | 1,092 59 | 48 28 | 66 82 | 92 76 | 82 85 |
| 522 46 | 112 98 | 218 83 | ..... | ..... | ..... | ..... | ..... | ..... |
| 992 61 | 814 89 | 725 89 | 629 04 | 1,264 89 | 134 47 | 122 86 | 361 72 | 361 72 |
| 4,271 25 | 4,785 72 | 4,551 53 | 4,310 13 | 4,924 28 | 972 50 | 987 43 | 1,343 34 | 1,475 87 |
| 316 65 | 550 77 | 414 02 | 518 69 | ..... | 486 44 | 861 65 | 819 08 | 844 72 |
| ..... | ..... | ..... | ..... | 84 12 | ..... | ..... | ..... | ..... |
| 345 00 | 450 00 | 414 02 | 415 00 | ..... | 250 00 | 260 00 | 300 00 | 260 00 |
| *28 35* | 100 77 | ..... | 103 69 | *84 12* | 236 44 | 601 65 | 519 08 | 584 72 |

* Domestic and Commercial not separable.
"y" 5 months Hydro; 7 months steam.
Italics denote losses.
xa, xb, xh See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality<br>Population- | Norwich xh 1,189 | | | | New Toronto xa 1,186 | |
|---|---|---|---|---|---|---|
| —— | 1913 | 1914 | 1915 | 1916 | 1914 | 1915 |
| EARNINGS | | | † | † | | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 1,926 78 | 2,168 13 | 2,529 91 | 2,319 58 | 653 56 | 1,416 10 |
| Commercial Light | 1,162 98 | 995 16 | 1,075 79 | 1,168 34 | * | * |
| Power | 1,978 55 | 1,893 72 | 2,169 31 | 2,642 97 | ..... | 2,140 36 |
| Street Light | 1,285 50 | 1,197 00 | 1,126 00 | 1,183 56 | 600 00 | 783 00 |
| Miscellaneous | 46 71 | 746 92 | 2,504 61 | 3,730 22 | ..... | ..... |
| Total | 6,400 52 | 7,000 93 | 9,405 62 | 11,044 67 | 1,253 56 | 4,339 46 |
| EXPENSES | | | | | | |
| Power Purchased | 3,176 24 | 2,849 30 | 2,954 63 | 6,039 14 | 233 30 | 1,351 92 |
| Sub-Stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 178 90 | 464 80 | 809 58 | 883 68 | 50 73 | 137 80 |
| Line Transformer M't'c'e. | ..... | 13 48 | 7 05 | 116 70 | ..... | ..... |
| Meter Maintenance | ..... | 37 11 | 1 32 | 1 35 | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance.. | 79 51 | 95 40 | 75 95 | 88 14 | 137 85 | 55 00 |
| Promotion of Business .. | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting ... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp.. | 838 27 | 534 15 | 595 76 | 574 16 | 318 01 | 629 49 |
| Undistributed Expenses .. | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments.. | 886 40 | 960 58 | 1,985 15 | 2,452 31 | 178 44 | 654 10 |
| Total Expenses | 5,159 32 | 4,954 82 | 6,429 44 | 10,155 48 | 918 33 | 2,828 31 |
| Surplus | 1,241 20 | 2,046 11 | 2,976 18 | 889 19 | 335 23 | 1,511 15 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge . | 500 00 | 530 00 | 1,195 00 | 1,370 00 | 200 00 | 550 00 |
| Surp. Less Depr. Chg. | 741 20 | 1,516 11 | 1,781 18 | *480 81* | 135 23 | 961 15 |

* Domestic and Commercial not separable.
† Miscellaneous includes Rural Revenue.
xa, xh See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| New Toronto 1,186 xa | Waterford xh 1,133 | | Shelburne 1,115 xa | Elora xh 1,115 | | | Beaverton xh 1,015 | | Markdale 989 xa |
|---|---|---|---|---|---|---|---|---|---|
| 1916 | 1915 | 1916 | 1916 | 1914 | 1915 | 1916 | 1915 | 1916 | 1916 |
| | | | g | c | | | q | | l |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 1,571 03 | 685 22 | 1,112 28 | 538 29 | 101 98 | 1,044 49 | 1,253 03 | 1,484 62 | 1,417 39 | 934 65 |
| 143 32 | 546 08 | 796 50 | 494 38 | 167 25 | 1,820 07 | 1,828 25 | 1,149 67 | 1,065 23 | 972 28 |
| 9,744 31 | ..... | 1,007 74 | ..... | ..... | 197 78 | 972 12 | 456 74 | 383 45 | 35 76 |
| 838 00 | 892 50 | 1,174 82 | 446 23 | 110 33 | 1,000 00 | 1,000 00 | 1,057 72 | 923 04 | 540 46 |
| ..... | ..... | ..... | ..... | ..... | 214 97 | 7 86 | 109 08 | 62 20 | 252 79 |
| 12,296 66 | 2,123 80 | 4,091 34 | 1,478 90 | 379 56 | 4,277 31 | 5,061 26 | 4,257 83 | 3,851 31 | 2,735 94 |
| 6,547 34 | 931 11 | 2,063 38 | 650 50 | 133 05 | 1,711 73 | 2,004 97 | 3,138 00 | 3,423 94 | 1,039 68 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 228 19 | 26 30 | 212 03 | ..... | ..... | 274 00 | 85 28 | 83 17 | 107 54 | 80 13 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 83 02 | 23 16 | 90 00 | ..... | 24 78 | 61 52 | 53 80 | ..... | 32 22 | 43 09 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 678 32 | 78 41 | 184 20 | 238 33 | 66 19 | 785 52 | 817 85 | 152 02 | 432 41 | 288 23 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 922 31 | 978 56 | 1,366 37 | 34 33 | 125 35 | 846 15 | 875 17 | 884 64 | 855 20 | 657 86 |
| 8,459 18 | 2,037 54 | 3,915 98 | 923 16 | 349 37 | 3,678 92 | 3,837 07 | 4,257 83 | 3,851 31 | 2,108 99 |
| 3,837 48 | 86 26 | 175 36 | 555 74 | 30 19 | 598 39 | 1,224 19 | ..... | ..... | 626 95 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 450 00 | ..... | ..... | ..... | ..... | 460 00 | 375 00 | ..... | ..... | ..... |
| 3,387 48 | 86 26 | 175 36 | 555 74 | 30 19 | 138 39 | 849 19 | ..... | ..... | 626 95 |

"c"—1 month's operation.
"g" 5 months' operation.
"l" 9 months' operation.
"q" 14 months' operation.
xa, xh See page 68.

STATEMENT

Comparative Detailed Operative Reports of Electric Departments of Hydro

| Municipality | Hagersville xa | | | | Winchester xh | | |
|---|---|---|---|---|---|---|---|
| Population | 1,105 | | | | 1,065 | | |
| —— | 1913 | 1914 | 1915 | 1916 | 1914 | 1915 | 1916 |
| | e | | | | | | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 81 42 | 1,222 33 | 1,172 85 | 1,606 80 | 2,972 09 | 1,698 40 | 1,812 29 |
| Commercial Light | * | * | 1,592 59 | 1,343 82 | * | 1,336 85 | 1,364 47 |
| Power | 746 85 | 2,679 08 | 2,434 62 | 2,527 92 | ..... | ..... | 227 52 |
| Street Light | 300 00 | 1,200 00 | 1,200 00 | 1,200 00 | 1,500 00 | 1,500 00 | 1,500 00 |
| Miscellaneous | ..... | ..... | ..... | ..... | ..... | ..... | 39 36 |
| Total | 1,128 27 | 5,101 41 | 6,400 06 | 6,678 54 | 4,472 09 | 4,535 25 | 4,943 64 |
| EXPENSES | | | | | | | |
| Power Purchased | 967 23 | 3,084 34 | 3,010 99 | 3,163 30 | 1,827 07 | 2,137 86 | 2,337 50 |
| Sub-Stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | ..... | 52 15 | 156 80 | 65 66 | 2 32 | 501 85 | 156 00 |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance. | ..... | 73 00 | 58 37 | ..... | 58 50 | 60 26 | 35 28 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 37 69 | 545 77 | 595 22 | 748 01 | 173 09 | 380 55 | 714 53 |
| Undistributed Expenses | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments | 97 60 | 383 93 | 577 57 | 550 80 | 541 80 | 795 91 | 773 70 |
| Total Expenses | 1,102 52 | 4,139 19 | 4,398 94 | 4,527 77 | 2,602 78 | 3,876 43 | 4,017 01 |
| Surplus | 25 75 | 962 22 | 2,001 12 | 2,150 77 | 1,869 31 | 658 82 | 926 63 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | ..... | 425 00 | 500 00 | 380 00 | 500 00 | 465 00 | 370 00 |
| Surp. Less Depr. Chg. | 25 75 | 537 22 | 1,501 12 | 1,770 77 | 1,369 31 | 193 82 | 556 63 |

* Domestic and Commercial not separable.
"e" 3 months' operation.
xa, xh See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Port Credit xh 1,046 | | | | Stayner xh 972 | | | | Cannington xa 903 | |
|---|---|---|---|---|---|---|---|---|---|
| 1913 | 1914 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 | 1915 | 1916 |
| | | | | d | | | | q | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 1,963 22 | 2,461 42 | 1,975 29 | 1,781 49 | 158 48 | 909 58 | 995 47 | 1,012 15 | 1,599 40 | 1,720 25 |
| * | * | 587 11 | 464 02 | 116 91 | 747 93 | 933 55 | 997 39 | 1,120 04 | 973 63 |
| 848 59 | 308 88 | 236 47 | 257 40 | 301 86 | 1,699 08 | 1,694 94 | 1,835 29 | 464 26 | 462 47 |
| 696 00 | 810 60 | 1,000 00 | 1,033 00 | 35 00 | 707 50 | 607 25 | 609 00 | 980 12 | 831 96 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 22 58 | ..... |
| 3,507,81 | 3,580 90 | 3,798 87 | 3,535 91 | 612 25 | 4,064 09 | 4,231 21 | 4,453 83 | 4,186 40 | 3,988 31 |
| 1,210 65 | 1,333 00 | 1,406 46 | 1,546 06 | 187 52 | 2,726 45 | 2,524 18 | 2,725 01 | 2,693 38 | 2,316 44 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 22 21 | 23 51 | 77 77 | 386 30 | ..... | 56 85 | 67 53 | 155 26 | 251 70 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 121 27 | 72 77 | 22 29 | 44 40 | ..... | 96 00 | 53 78 | ..... | 11 04 | 33 72 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 171 82 | 450 67 | 470 75 | 214 04 | 14 48 | 31 00 | 98 02 | 358 14 | 225 48 | 690 83 |
| ..... | 18 46 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 48 80 |
| 534 23 | 571 55 | 537 22 | 568 95 | 340 82 | 784 66 | 784 66 | 753 16 | 1,006 80 | 898 52 |
| 2,060 18 | 2,469 96 | 2,514 49 | 2,759 75 | 542 82 | 3,694 96 | 3,528 17 | 3,991 57 | 4,186 40 | 3,988 31 |
| 1,447 63 | 1,110 94 | 1,284 38 | 776 16 | 69 43 | 369 13 | 703 04 | 462 26 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 446 00 | 535 00 | 600 00 | 470 00 | ..... | 115 00 | 300 00 | 280 00 | ..... | ..... |
| 1,001 63 | 575 94 | 684 38 | 306 16 | 69 43 | 254 13 | 403 04 | 182 26 | ..... | ..... |

* Domestic and Commercial not separable.
"d" 2 months' operation.
"q" 14 months' operation.
xa, xh See page 68.

STATEMENT

Comparative Detailed Operative Reports of Electric Departments of Hydro

| Municipality | Dutton xa | | Pt. Stanley xa | | | | Milverton |
|---|---|---|---|---|---|---|---|
| Population | 870 | | 849 | | | | 890 xh |
| —— | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 | 1916 |
| | e | | | | | | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 318 85 | 1,353 04 | 1,828 66 | 2,066 41 | 2,498 57 | 2,956 97 | 292 00 |
| Commercial Light | 206 59 | 960 27 | 1,771 70 | 1,753 60 | 1,736 42 | 1,551 37 | 406 95 |
| Power | ..... | 135 31 | 2,418 00 | 2,170 88 | 2,064 76 | 1,985 92 | ..... |
| Street Light | 364 23 | 1,469 88 | 2,199 50 | 1,961 35 | 1,900 50 | 1,714 00 | 665 98 |
| Miscellaneous | ..... | 111 39 | ..... | 157 77 | 226 18 | 214 00 | ..... |
| Total | 889 67 | 4,029 89 | 8,217 86 | 8,110 01 | 8,426 43 | 8,422 26 | 1,364 93 |
| EXPENSES | | | | | | | |
| Power Purchased | 442 18 | 1,813 70 | 3,506 43 | 3,682 26 | 4,735 96 | 4,753 04 | 593 81 |
| Sub-Stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 15 55 | 22 35 | 354 49 | 116 92 | 65 01 | 97 43 | 4 98 |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | 12 04 | 69 91 | ..... | ..... | 63 13 | 191 12 | 33 48 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | 292 81 | 286 23 | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 79 30 | 204 36 | 368 47 | 581 96 | 919 21 | 940 24 | 8 08 |
| Undistributed Expenses | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments | 144 70 | 476 04 | 1,188 91 | 1,232 82 | 1,232 82 | 1,232 82 | 690 86 |
| Total Expenses | 693 77 | 2,586 36 | 5,711 11 | 5,900 19 | 7,016 13 | 7,214 65 | 1,331 21 |
| Surplus | 195 90 | 1,443 53 | 2,506 75 | 2,209 82 | 1,410 30 | 1,207 61 | 33 72 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | ..... | 240 00 | 617 75 | 950 00 | 740 00 | 665 00 | ..... |
| Surp. Less Depr. Chg. | 195 90 | 1,203 53 | 1,889 00 | 1,259 82 | 670 30 | 542 61 | 33 72 |

"e" 3 months' operation.
xa, xh See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| xh Chesterville 854 | | | xa Ayr 800 | | xh Waterdown 785 | | | |
|---|---|---|---|---|---|---|---|---|
| 1914 | 1915 | 1916 | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 |
| | | | n | | | | † | † |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 530 13 | 919 27 | 1,490 99 | 892 63 | 1,084 46 | 1,164 29 | 1,054 13 | 1,202 41 | 1,218 86 |
| 791 67 | 1,187 54 | 1,240 56 | 773 08 | 804 00 | * | 535 83 | 567 65 | 575 10 |
| ..... | ..... | 177 55 | 348 78 | 393 39 | 917 63 | 1,011 38 | 1,207 80 | 1,149 78 |
| 465 00 | 689 00 | 798 00 | 1,091 33 | 1,092 00 | 435 00 | 510 00 | 580 80 | 590 00 |
| ..... | ..... | ..... | ..... | ..... | ..... | 418 46 | 1,488 36 | 1,681 41 |
| 1,786 80 | 2,795 81 | 3,707 10 | 3,105 82 | 3,373 85 | 2,516 94 | 3,529 80 | 5,046 22 | 5,215 15 |
| 1,107 66 | 2,123 30 | 1,993 63 | 1,170 61 | 1,320 35 | 988 00 | 1,660 71 | 1,605 10 | 2,003 34 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 126 30 | 336 99 | ..... | ..... | 183 71 | 67 66 | 281 36 | 354 12 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 48 29 | 45 20 | 44 52 | 35 31 | 48 15 | 17 00 | 41 10 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 59 00 | 56 77 | 120 00 | 397 82 | 301 98 | 213 14 | 207 87 | 327 69 | 392 97 |
| ..... | ..... | ..... | ..... | 115 74 | ..... | ..... | ..... | ..... |
| 344 00 | 572 55 | 435 34 | 1,119 49 | 1,076 82 | 521 56 | 723 09 | 1,243 23 | 1,482 95 |
| 1,510 66 | 2,878 92 | 2,934 25 | 2,733 12 | 2,859 41 | 1,941 72 | 2,707 48 | 3,474 38 | 4,274 48 |
| 276 14 | ..... | 772 85 | 372 70 | 514 44 | 575 22 | 822 32 | 1,571 84 | 940 67 |
| ..... | 83 11 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 247 50 | ..... | 375 00 | 250 00 | 260 00 | 365 00 | 420 00 | 1,000 00 | 887 00 |
| 28 64 | *83 11* | 397 85 | 122 70 | 254 44 | 210 22 | 402 32 | 571 84 | 53 67 |

* Domestic and Commercial not separable.
† Miscellaneous includes Rural Revenue.
"n" 11 months' operation.
Italics denote losses.
xa, xh See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | Thamesville xh | | Bolton xh | | Dundalk | Bothwell xh | |
|---|---|---|---|---|---|---|---|
| Population | 769 | | 727 | | 721 xh | 703 | |
| —— | 1915 | 1916 | 1915 | 1916 | 1916 | 1915 | 1916 |
| | e | | m | | | e | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 378 79 | 1,729 79 | 624 86 | 926 86 | 924 30 | 230 61 | 928 16 |
| Commercial Light | 283 86 | 1,021 17 | 553 80 | 882 26 | 960 58 | 191 21 | 768 59 |
| Power | ..... | ..... | 313 74 | 3,947 32 | 618 52 | ..... | ..... |
| Street Light | 255 00 | 1,030 00 | 811 25 | 893 75 | 744 00 | 219 25 | 1,186 06 |
| Miscellaneous | ..... | 25 42 | ..... | 186 00 | ..... | ..... | ..... |
| Total | 917 65 | 3,806 38 | 2,303 65 | 6,836 19 | 3,247 40 | 641 07 | 2,882 81 |
| EXPENSES | | | | | | | |
| Power Purchased | 537 22 | 1,872 33 | 1,126 94 | 4,120 46 | 1,362 22 | 440 00 | 1,604 92 |
| Sub-Stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 4 15 | 22 40 | 206 57 | 30 82 | 30 00 | ..... | 15 45 |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance. | 40 00 | 20 | 12 12 | 77 61 | ..... | 36 72 | 11 16 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 116 00 | 262 83 | 314 26 | 289 94 | 158 80 | 4 80 | 114 77 |
| Undistributed Expenses | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments | ..... | 740 65 | 552 32 | 866 16 | 818 56 | ..... | 565 99 |
| Total Expenses | 697 37 | 2,898 41 | 2,212 21 | 5,384 99 | 2,369 58 | 481 52 | 2,312 29 |
| Surplus | 220 28 | 907 97 | 91 44 | 1,441 20 | 877 82 | 159 55 | 570 52 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | ..... | 190 00 | ..... | 321 00 | 200 00 | ..... | 135 00 |
| Surp. Less Depr. Chg. | 220 28 | 717 97 | 91 44 | 1,120 20 | 677 82 | 159 55 | 435 52 |

"e" 3 months' operation.
"m" 10 months' operation.
xh See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Lucan xh 662 | | Woodbridge xh 639 | | Ailsa Craig 586 xa | Creemore xh 585 | | | Embro xa 483 | |
|---|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1916 | 1914 | 1915 | 1916 | 1915 | 1916 |
| n | | | | n | d | | | n | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 824 07 | 1,124 73 | 367 49 | 507 10 | 579 57 | 97 31 | 699 81 | 922 41 | 400 50 | 633 95 |
| 687 37 | 857 11 | 443 53 | 556 82 | 213 46 | 127 31 | 937 84 | 1,041 90 | 489 67 | 598 41 |
| 18 66 | 159 67 | 498 44 | 2,221 33 | 15 57 | 39 60 | 939 20 | 1,151 96 | ..... | 155 54 |
| 812 60 | 979 50 | 960 00 | 963 00 | 819 62 | 138 80 | 857 28 | 874 58 | 620 68 | 685 10 |
| 108 10 | 135 55 | ..... | ..... | ..... | ..... | 1 35 | 6 00 | ..... | 58 25 |
| 2,450 80 | 3,256 56 | 2,269 46 | 4,248 25 | 1,628 22 | 403 02 | 3,435 48 | 3,996 85 | 1,510 85 | 2,131 25 |
| 1,511 32 | 1,543 95 | 877 63 | 2,461 11 | 746 02 | 162 00 | 2,580 53 | 2,252 69 | 782 02 | 1,057 98 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 66 30 | 66 65 | 44 81 | 30 56 | ..... | 185 17 | 182 00 | 16 00 | 16 40 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 14 50 | 24 96 | 48 79 | 16 74 | ..... | 14 80 | 22 20 | 36 28 | 94 61 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 440 03 | 254 59 | 153 75 | 284 01 | 100 07 | 6 14 | 221 98 | 257 16 | 95 98 | 74 71 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 412 43 | 873 49 | 239 38 | 636 88 | 401 10 | 20 59 | 509 55 | 689 52 | 285 25 | 390 30 |
| 2,363 78 | 2,752 83 | 1,362 37 | 3,475 60 | 1,294 49 | 188 73 | 3,512 03 | 3,403 57 | 1,215 53 | 1,634 00 |
| 87 02 | 503 73 | 907 09 | 772 65 | 333 73 | 214 29 | ..... | 593 28 | 295 32 | 497 25 |
| ..... | ..... | ..... | ..... | ..... | ..... | 76 55 | ..... | ..... | ..... |
| ..... | 270 00 | 425 00 | 300 00 | 180 00 | ..... | ..... | 200 00 | 250 00 | 235 00 |
| 87 02 | 233 73 | 482 09 | 472 65 | 153 73 | 214 29 | *76 55* | 303 28 | 45 32 | 262 25 |

"d" 2 months' operation.
"n" 11 months' operation.
Italics denote losses.
xa, xh See page 68.

## STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality | Coldwater xh | | | | Wyoming | Flesherton |
|---|---|---|---|---|---|---|
| Population | 579 | | | | 544 xh | 428 xh |
| —— | 1913 | 1914 | 1915 | 1916 | 1916 | 1916 |
| EARNINGS | | | | | d | |
| | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 735 68 | 853 56 | 874 94 | 977 62 | 96 84 | 568 76 |
| Commercial Light | * | 589 85 | 703 35 | 848 82 | 85 38 | 423 83 |
| Power | 247 19 | 617 26 | 363 88 | 247 91 | ..... | ..... |
| Street Light | 532 00 | 528 00 | 528 00 | 528 00 | 128 00 | 504 00 |
| Miscellaneous | ..... | ..... | ..... | ..... | ..... | ..... |
| Total | 1,514 87 | 2,588 67 | 2,470 17 | 2,602 35 | 310 22 | 1,496 59 |
| EXPENSES | | | | | | |
| Power Purchased | 535 86 | 897 12 | 1,018 75 | 1,008 22 | 72 52 | 809 49 |
| Sub-Stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce. | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 74 58 | 139 37 | 138 72 | 147 60 | ..... | ..... |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | 32 92 | 32 00 | 20 00 | 22 32 | 22 32 | 22 32 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 1 50 | 68 00 | 80 00 | 100 00 | 21 48 | 185 46 |
| Undistributed Expenses | ..... | ..... | 300 00 | 226 90 | ..... | ..... |
| Int. and Deb. Payments | ..... | 481 64 | 481 64 | 481 64 | 103 04 | 85 34 |
| Total Expenses | 644 86 | 1,618 13 | 2,039 11 | 1,986 68 | 219 36 | 1,102 61 |
| Surplus | 870 01 | 970 54 | 431 06 | 615 67 | 90 86 | 393 98 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | 375 00 | 380 00 | 380 00 | 325 00 | ..... | 150 00 |
| Surp. Less Depr. Chg. | 495 01 | 590 54 | 51 06 | 290 67 | 90 86 | 243 98 |

* Domestic and Commercial not separable.
" d " 2 months' operation.
xh See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| xh Woodville 388 | | Chatsworth 374 xh | Baden xh | | | | Brechin xh | |
|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1916 | 1913 | 1914 | 1915 | 1916 | 1915 | 1916 |
| q | | n | | | | | | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 324 34 | 496 52 | 287 52 | 884 11 | 1,247 81 | 938 33 | 808 21 | 148 83 | 172 42 |
| 563 68 | 512 07 | 193 15 | * | * | * | * | 407 78 | 404 70 |
| 1,149 17 | 1,185 54 | 391 98 | 2,242 77 | 4,580 23 | 4,588 87 | 5,059 22 | 1,007 59 | 1,153 32 |
| 507 60 | 423 44 | 325 00 | 830 95 | 705 68 | 580 06 | 683 58 | 117 00 | 117 00 |
| ..... | ..... | 77 65 | ..... | ..... | ..... | ..... | ..... | 150 00 |
| 2,544 89 | 2,617 57 | 1,275 30 | 3,957 83 | 6,533 72 | 6,107 26 | 6,551 01 | 1,681 20 | 1,997 44 |
| 2,167 90 | 1,970 18 | 727 65 | 2,807 04 | 4,541 56 | 4,153 75 | 5,080 81 | 1,498 18 | 1,673 64 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 12 00 | 8 55 | 62 20 | 28 84 | 179 28 | 52 26 | 48 36 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 26 64 | 11 04 | 2 50 | ..... | 14 52 | 43 53 | 11 04 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 42 87 | 297 34 | 91 78 | 267 45 | 389 45 | 357 10 | 321 95 | 86 22 | 152 71 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 295 48 | 330 46 | 310 81 | 325 26 | 325 26 | 373 71 | 325 28 | 96 80 | 171 09 |
| 2,544 89 | 2,617 57 | 1,194 94 | 3,428 59 | 5,450 07 | 4,980 35 | 5,787 44 | 1,681 20 | 1,997 44 |
| ..... | ..... | 80 36 | 529 24 | 1,083 65 | 1,126 91 | 763 57 | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | 277 00 | 280 00 | 300 00 | 275 00 | ..... | ..... |
| ..... | ..... | 80 36 | 252 24 | 803 65 | 826 91 | 488 57 | ..... | ..... |

* Domestic and Commercial not separable.
"n" 11 months' operation.
"q" 14 months' operation.
xh See page 68.

## STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality<br>Population | Beachville<br>xh | | | | Burford<br>xh | |
|---|---|---|---|---|---|---|
| —— | 1913 | 1914 | 1915 | 1916 | 1915 | 1916 |
| | s | | | | h | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 562 37 | 587 33 | 363 33 | 400 81 | 176 14 | 577 69 |
| Commercial Light | * | * | 296 37 | 263 62 | 111 81 | 380 44 |
| Power | 5,993 81 | 5,368 04 | 5,593 15 | 5,393 02 | 235 76 | 519 72 |
| Street Light | 206 03 | 150 00 | 150 00 | 150 00 | 279 48 | 572 00 |
| Miscellaneous | | | | | | |
| Total | 6,762 21 | 6,105 37 | 6,402 85 | 6,207 45 | 803 19 | 2,049 85 |
| EXPENSES | | | | | | |
| Power Purchased | 4,221 68 | 3,283 89 | 4,522 88 | 5,352 36 | 571 55 | 1,129 67 |
| Sub-Stn. Operation | | | | | | |
| " " Maint'ce | | | | | | |
| Dist. System, Operation and Maintenance | 54 34 | 34 85 | 27 76 | 56 33 | | 25 84 |
| Line Transformer M't'c'e | | | | | | |
| Meter Maintenance | | | | | | |
| Consumers' Premises-Exp. | | | | | | |
| Street Light Sys., Operation and Maintenance | 76 37 | 44 46 | 9 95 | 35 88 | | 12 94 |
| Promotion of Business | | | | | | |
| Billing and Collecting | | | | | | |
| Gen. Office, Sal. and Exp. | 249 50 | 193 11 | 258 66 | 325 81 | 77 06 | 71 43 |
| Undistributed Expenses | 127 62 | 29 18 | | 38 36 | | 59 48 |
| Int. and Deb. Payments | 288 88 | 501 45 | 357 79 | 369 82 | 201 21 | 413 25 |
| Total Expenses | 5,018 39 | 4,086 40 | 5,177 04 | 6,178 56 | 849 82 | 1,712 61 |
| Surplus | 1,743 82 | 2,018 97 | 1,225 81 | 28 89 | | 337 24 |
| Loss | | | | | 46 63 | |
| Depreciation Charge | 525 00 | 400 00 | 420 00 | 375 00 | | 165 00 |
| Surp. Less Depr. Chg. | 1,218 82 | 1,618 97 | 805 81 | *34 11* | *46 63* | 172 24 |

* Domestic and Commercial not separable.
"h" 6 months' operation.
"s" 2 years' operation.
Italics denote losses.
xh See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Comber xh | | Drumbo xh | | Delaware xh | | Dorchester xh | | Granton xh | Grantham Twp. xh |
|---|---|---|---|---|---|---|---|---|---|
| 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 | 1916 | 1916 |
| j | | | | m | | | | | † |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 214 87 | 538 57 | 304 39 | 340 75 | 146 16 | 354 60 | 579 23 | 613 03 | 180 84 | 3,030 72 |
| 274 49 | 678 58 | 288 99 | 277 43 | 114 18 | 141 64 | 309 88 | 275 82 | 70 90 | ..... |
| ..... | ..... | 159 85 | 116 57 | ..... | ..... | 287 95 | 667 93 | ..... | ..... |
| 448 37 | 779 51 | 455 00 | 420 00 | 188 18 | 241 50 | 85 72 | 326 74 | 240 01 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 937 73 | 1,996 66 | 1,208 23 | 1,154 75 | 448 52 | 737 74 | 1,262 78 | 1,883 52 | 491 75 | 3,030 72 |
| 620 24 | 1,159 98 | 795 36 | 602 85 | 217 11 | 352 26 | 583 47 | 785 60 | 248 72 | 668 09 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 38 38 | ..... | 3 35 | ..... | 7 87 | ..... | 33 19 | 8 32 | 471 33 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | 40 94 | ..... | 11 04 | ..... | 34 20 | ..... | 22 77 | 2 40 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 17 80 | 474 86 |
| 135 76 | 137 15 | 51 29 | 54 64 | 71 89 | 45 63 | 58 54 | 102 37 | ..... | ..... |
| ..... | 50 40 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 172 92 | 378 26 | 281 33 | 271 11 | 77 13 | 229 35 | 159 47 | 281 55 | 108 53 | 2,997 93 |
| 928 92 | 1,805 11 | 1,127 98 | 942 99 | 366 13 | 669 31 | 801 48 | 1,225 48 | 385 77 | 4,612 21 |
| 8 81 | 191 55 | 80 25 | 211 76 | 82 39 | 68 43 | 461 30 | 658 04 | 105 98 | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,581 49 |
| ..... | 145 00 | ..... | 110 00 | ..... | 80 00 | 200 00 | 150 00 | ..... | ..... |
| 8 81 | 46 55 | 80 25 | 101 76 | 82 39 | *11 57* | 261 30 | 508 04 | 105 98 | *1,581 49* |

† Domestic includes Rural Revenue.
"j" 7 months' operation.
"m" 10 months' operation.
Italics denote losses.
xh See page 68.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality<br>Population | Elmvale<br>xh | | | | Holstein<br>xh | Lambeth<br>xh |
|---|---|---|---|---|---|---|
| —— | 1913 | 1914 | 1915 | 1916 | 1916 | 1915 |
| | h | | | | j | l |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 284 34 | 673 18 | 704 12 | 816 74 | 141 80 | 344 47 |
| Commercial Light | 358 60 | 896 11 | 778 93 | 736 74 | 169 63 | 119 00 |
| Power | ..... | 438 38 | 1,186 44 | 1,043 96 | ..... | 455 90 |
| Street Light | 302 00 | 624 00 | 624 00 | 624 00 | 124 00 | 295 16 |
| Miscellaneous | ..... | ..... | ..... | ..... | ..... | ..... |
| Total | 944 94 | 2,631 67 | 3,293 49 | 3,221 44 | 435 43 | 1,214 53 |
| EXPENSES | | | | | | |
| Power Purchased | 506 33 | 898 78 | 1,335 80 | 1,352 32 | 213 51 | 800 72 |
| Sub-stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 7 86 | 326 94 | 300 00 | 300 00 | 12 17 | 20 10 |
| Line Transformer M't'c'e | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | ..... | ..... | 15 17 | 56 28 | 75 | ..... |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 75 12 | 434 67 | 213 27 | 147 24 | 37 56 | 44 71 |
| Undistributed Expenses | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments | 449 76 | 434 67 | 546 42 | 498 83 | 229 17 | 156 10 |
| Total Expenses | 1,039 07 | 2,108 42 | 2,410 66 | 2,354 67 | 493 16 | 1,021 63 |
| Surplus | ..... | 523 25 | 882 83 | 866 77 | ..... | 192 90 |
| Loss | 94 13 | ..... | ..... | ..... | 57 73 | ..... |
| Depreciation Charge | ..... | 350 00 | 385 00 | 290 00 | ..... | ..... |
| Surp. Less Depr. Chg. | *94 13* | 173 25 | 497 83 | 576 77 | *57 73* | 192 90 |

"h" 6 months' operation.
"j" 7 months' operation.
"l" 9 months' operation.
Italics denote losses.
xh See page 68.

" C "—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Lambeth xh | Lynden xh | | Mount Brydges xh | | Otterville xh | Plattsville xh | | Princeton xh | |
|---|---|---|---|---|---|---|---|---|---|
| 1916 | 1915 | 1916 | 1915 | 1916 | 1916 | 1915 | 1916 | 1915 | 1916 |
| | d | | l | | m | | | n | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 575 65 | 60 00 | 254 76 | 427 45 | 644 75 | 476 40 | 551 39 | 666 30 | 440 42 | 657 80 |
| 208 96 | 28 94 | 227 57 | * | 170 46 | 111 14 | 477 71 | 580 62 | 71 57 | 127 81 |
| 249 36 | ..... | 650 38 | 517 50 | 760 58 | 22 50 | 1,128 27 | 1,436 62 | ..... | 192 92 |
| 420 00 | 67 50 | 360 00 | 449 66 | 532 00 | 269 15 | 498 00 | 534 00 | 340 00 | 340 00 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 6 61 |
| 1,453 97 | 156 44 | 1,492 71 | 1,394 61 | 2,107 79 | 879 19 | 2,655 37 | 3,217 54 | 851 99 | 1,325 14 |
| 819 20 | 55 95 | 920 13 | 1,025 71 | 1,308 69 | 429 36 | 2,031 19 | 2,079 85 | 507 23 | 919 15 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 09 | ..... | 23 89 | 22 05 | 12 57 | 3 15 | ..... | 49 30 | ..... | 9 90 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 70 99 | ..... | 24 54 | ..... | 28 00 | 11 04 | 14 02 | 19 49 | ..... | 15 93 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 58 32 | ..... | 70 10 | 117 38 | 79 10 | 74 29 | 85 42 | 86 58 | 11 84 | 132 49 |
| ..... | ..... | ..... | ..... | 51 09 | ..... | ..... | ..... | ..... | ..... |
| 382 49 | ..... | 315 32 | 358 60 | 296 20 | 346 74 | 386 29 | 346 17 | 263 35 | 239 57 |
| 1,334 09 | 55 95 | 1,353 98 | 1,523 74 | 1,775 65 | 864 58 | 2,516 92 | 2,581 39 | 782 42 | 1,317 04 |
| 119 88 | 100 49 | 138 73 | ..... | 332 14 | 14 61 | 138 45 | 636 15 | 69 57 | 8 10 |
| ..... | ..... | ..... | 129 13 | ..... | ..... | ..... | ..... | ..... | ..... |
| 100 00 | ..... | 120 00 | ..... | 125 00 | ..... | ..... | 145 00 | ..... | 96 00 |
| 19 88 | 100 49 | 18 73 | *129 13* | 207 14 | 14 61 | 138 45 | 491 15 | 69 57 | *87 90* |

* Domestic and Commercial not separable
"d" 2 months' operation.
"l" 9 months' operation.
"m" 10 months' operation.
"n" 11 months' operation.
Italics denote losses.
xh See page 68.

## STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

| Municipality<br>Population | Port McNicoll<br>xh | | Rockwood<br>xh | | | | Sunderland<br>xh |
|---|---|---|---|---|---|---|---|
| —— | 1915 | 1916 | 1913 | 1914 | 1915 | 1916 | 1915 |
| | n | | f | | | | q |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 415 03 | 618 82 | 230 27 | 848 55 | 731 97 | 733 66 | 794 83 |
| Commercial Light | 311 20 | 301 92 | * | * | 251 27 | 388 05 | 939 85 |
| Power | ..... | 7 37 | 480 82 | 1,542 01 | 907 57 | 903 57 | ..... |
| Street Light | 351 00 | 336 00 | 196 00 | 549 50 | 507 50 | 506 00 | 323 82 |
| Miscellaneous | ..... | ..... | ..... | ..... | ..... | ..... | 20 08 |
| Total | 1,077 23 | 1,264 11 | 907 09 | 2,940 06 | 2,398 31 | 2,531 28 | 2,078 58 |
| EXPENSES | | | | | | | |
| Power Purchased | 616 27 | 670 51 | 237 50 | 1,113 49 | 1,154 85 | 870 81 | 1,621 28 |
| Sub-stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 18 88 | 99 30 | ..... | ..... | ..... | 36 26 | ..... |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance. | 24 24 | 33 48 | ..... | 36 14 | 13 92 | 46 97 | 24 96 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 164 58 | 169 56 | 44 46 | 119 55 | 115 74 | 111 49 | 33 27 |
| Undistributed Expenses | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments. | 203 14 | 482 51 | 357 49 | 413 19 | 445 80 | 395 77 | 399 07 |
| Total Expenses | 1,027 11 | 1,455 36 | 639 45 | 1,682 37 | 1,730 31 | 1,461 30 | 2,078 58 |
| Surplus | 50 12 | ..... | 267 64 | 1,257 69 | 668 00 | 1,069 98 | ..... |
| Loss | ..... | 191 25 | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | ..... | 130 00 | ..... | 275 00 | 300 00 | 240 00 | ..... |
| Surp. Less Depr. Chg. | 50 12 | *321 25* | 267 64 | 982 69 | 368 00 | 829 98 | ..... |

* Domestic and Commercial not separable.
"f" 4 months' operation.
"n" 11 months' operation.
"q" 14 months' operation.
Italics denote losses.
xh See page 68.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Sunderland | St. George | | Stanford Twp. | Thorndale | | | Thamesford | | |
|---|---|---|---|---|---|---|---|---|---|
| xh | xh | | xh | xh | | | xh | | |
| 1916 | 1915 | 1916 | 1916 | 1914 | 1915 | 1916 | 1914 | 1915 | 1916 |
| | f | | f | m | | | m | | |
| $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| 752 64 | 203 23 | 832 23 | 730 57 | 446 27 | 299 37 | 328 67 | 393 49 | 574 34 | 642 21 |
| 840 22 | 139 16 | 474 38 | † | * | 374 09 | 403 01 | 323 92 | 481 78 | 537 42 |
| 211 86 | 311 30 | 583 52 | 4,331 96 | 329 27 | 542 53 | 459 79 | 946 32 | 423 21 | 268 23 |
| 272 16 | 202 50 | 495 00 | ..... | 294 00 | 294 00 | 294 46 | 372 16 | 469 00 | 476 00 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2,076 88 | 856 19 | 2,385 13 | 5,062 53 | 1,069 54 | 1,509 99 | 1,485 93 | 2,035 89 | 1,948 33 | 1,923 86 |
| 1,345 62 | 411 15 | 1,227 88 | 2,009 48 | 510 00 | 883 86 | 1,139 22 | 1,031 10 | 993 40 | 1,013 59 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | 1 20 | 55 03 | 5 25 | 71 52 | 74 42 | 9 80 | 7 19 | 2 50 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 22 32 | ..... | 3 00 | ..... | 29 04 | 7 19 | 65 18 | 23 68 | 27 47 | 33 90 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 309 87 | 64 30 | 126 49 | 900 44 | 94 12 | 64 63 | 104 58 | 125 94 | 159 32 | 122 89 |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 48 84 |
| 399 07 | 172 00 | 412 83 | 737 19 | 109 92 | 11 74 | 205 60 | 249 94 | 209 41 | 477 08 |
| 2,076 88 | 647 45 | 1,771 40 | 3,702 14 | 748 33 | 1,138 94 | 1,589 00 | 1,440 46 | 1,396 79 | 1,698 80 |
| ..... | 208 74 | 613 73 | 1,360 39 | 321 21 | 371 05 | ..... | 595 43 | 551 54 | 225 06 |
| ..... | ..... | ..... | ..... | ..... | ..... | 103 07 | ..... | ..... | ..... |
| ..... | ..... | 150 00 | ..... | 130 00 | 135 00 | 85 00 | 250 00 | 250 00 | 235 00 |
| ..... | 208 74 | 463 73 | 1,360 39 | 191 21 | 236 05 | *188 07* | 345 43 | 301 54 | *9 94* |

* Domestic and Commercial not separable.
† Revenue all Rural.
"f" 4 months' operation.
"m" 10 months' operation.
Italics denote losses.
xh See page 68.

## STATEMENT "C"—Concluded

### Comparative Detailed Operative Reports of Electric Departments of Hydro Municipalities for the years ending December 31st, 1913, 1914, 1915 and 1916

| Municipality<br>Population | Toronto Township<br>xh | | | Williamsburg<br>xh | | Waubaushene<br>xh | |
|---|---|---|---|---|---|---|---|
| —— | 1914 | 1915 | 1916 | 1915 | 1916 | 1915 | 1916 |
| | r | | | | | n | |
| EARNINGS | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. | $ c. |
| Domestic Light | 8,151 12 | 8,615 27 | 8,369 78 | 403 72 | 568 66 | 516 34 | 646 58 |
| Commercial Light | ..... | ..... | ..... | 139 26 | 224 29 | 220 50 | 496 47 |
| Power | ..... | ..... | ..... | ..... | 285 73 | 32 28 | 49 52 |
| Street Light | ..... | ..... | ..... | 156 00 | 220 67 | 377 00 | 348 00 |
| Miscellaneous | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Total | 8,151 12 | 8,615 27 | 8,369 78 | 698 98 | 1,299 35 | 1,146 12 | 1,540 57 |
| EXPENSES | | | | | | | |
| Power Purchased | 3,085 55 | 2,153 94 | 2,174 17 | 318 62 | 547 82 | 560 77 | 642 81 |
| Sub-stn. Operation | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " " Maint'ce | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dist. System, Operation and Maintenance | 284 02 | 706 20 | 395 59 | 82 50 | 97 63 | 16 55 | 110 16 |
| Line Transformer M't'c'e. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Meter Maintenance | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Consumers' Premises–Exp. | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Street Light Sys., Operation and Maintenance | ..... | ..... | ..... | ..... | 16 04 | ..... | 17 38 |
| Promotion of Business | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Billing and Collecting | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gen. Office, Sal. and Exp. | 374 61 | 376 04 | 462 21 | 30 02 | 41 60 | 175 55 | 112 77 |
| Undistributed Expenses | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Int. and Deb. Payments | 1,358 65 | 3,482 49 | 3,253 87 | 211 27 | 220 67 | 220 84 | 425 56 |
| Total Expenses | 5,102 83 | 6,718 67 | 6,285 84 | 642 41 | 923 76 | 973 21 | 1,308 68 |
| Surplus | 3,048 29 | 1,896 60 | 2,083 94 | 56 57 | 375 59 | 172 91 | 231 89 |
| Loss | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Depreciation Charge | ..... | 1,800 00 | 1,934 00 | ..... | 70 00 | ..... | 115 00 |
| Surp. Less Depr. Chg. | 3,048 29 | 96 60 | 149 94 | 56 57 | 305 59 | 172 91 | 116 89 |

"n" 11 months' operation.
"r" 17 months' operation.
xh See page 68.

# COMPARATIVE STATEMENT

OF

REVENUE, NUMBER OF CONSUMERS, TOTAL CONSUMPTION, AVERAGE MONTHLY CONSUMPTION PER CONSUMER, AVERAGE MONTHLY BILL AND NET COST PER KW-HR. FOR YEARS 1912, 1913, 1914, 1915 AND 1916

# STATEMENT "D"

Showing Comparative Revenue, Number of Customers, Total Kw-hr. Consumption, Average Monthly Consumption per Customer, Average Monthly Bill, and Net Cost per Kw-hr. for the Years 1912, 1913, 1914, 1915 and 1916

| Municipality | Year | Domestic Light | | | | | | | Commercial Light | | | | | | | Power | | Total Number Consumers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per Kw-hr. | Net Cost prior to Hydro | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per Kw-hr. | Net Cost prior to Hydro | Revenue | Number of Consumers | |
| | | $ c. | Kw-hrs. | | Kw-hr | $ c. | cents | cents | $ c. | Kw-hrs. | | Kw-hr | $ c. | cents | cents | $ c. | | |
| Toronto | 1912 | 201,554 74 | ..... | 11,441 | ..... | ..... | ..... | 8+25 | * | ..... | * | ..... | ..... | ..... | 12+25 | 225,451 55 | 518 | 11,959 |
| | 1913 | 190,376 89 | 4,220,270 | 16,519 | 25 | 1 25 | 4.4 | | 233,799 04 | 6,156,073 | 4,764 | ..... | 4 09 | 3.8 | | 347,708 88 | 1,037 | 22,320 |
| | 1914 | 289,645 45 | 6,240,882 | 23,181 | 27 | 1 22 | 4.5 | | 305,534 31 | 7,683,589 | 6,276 | 116 | 4 61 | 3.9 | | 483,681 15 | 1,494 | 30,951 |
| | 1915 | 331,807 18 | 8,599,559 | 29,724 | 27 | 1 04 | 3.9 | | 291,907 92 | 10,243,496 | 7,227 | 126 | 3 60 | 2.8 | | 575,239 17 | 1,504 | 38,455 |
| | 1916 | 335,181 19 | 11,250,291 | 34,347 | 29 | 89 | 3.1 | | 272,243 06 | 11,491,577 | 7,406 | 131 | 3 10 | 2.4 | | 612,918 32 | 1,707 | 43,460 |
| Hamilton | 1913 | 34,451 95 | 862,937 | 5,117 | ..... | ..... | 3.9 | 8+25 | 25,453 99 | 628,471 | 924 | ..... | ..... | 4.1 | 8 | 47,415 58 | 209 | 6,250 |
| | 1914 | 74,668 38 | 1,856,627 | 8,404 | 23 | 92 | 4 | | 35,125 57 | 1,309,863 | 1,375 | 95 | 2 55 | 3.4 | | 70,665 43 | 337 | 10,116 |
| | 1915 | 92,207 60 | 2,514,104 | 10,595 | 23 | 81 | 3.7 | | 34,633 16 | 1,840,920 | 1,434 | 109 | 2 06 | 1.9 | | 84,789 71 | 406 | 12,435 |
| | 1916 | 108,137 22 | 3,625,059 | 12,423 | 26 | 78 | 3 | | 36,126 03 | 2,085,601 | 1,546 | 116 | 2 02 | 1.8 | | 115,224 78 | 464 | 14,433 |
| Ottawa | 1912 | 62,598 18 | ..... | 5,390 | ..... | ..... | ..... | 7+8 | 51,365 91 | ..... | 440 | ..... | ..... | ..... | 7+8 | 25,299 94 | 90 | 5,920 |
| | 1913 | 68,032 27 | ..... | 5,766 | ..... | 1 02 | ..... | | 53,438 04 | ..... | 818 | ..... | 7 08 | ..... | | 26,978 76 | 152 | 6,736 |
| | 1914 | 68,767 48 | 1,376,353 | 6,342 | 19 | 95 | 5 | | 51,769 72 | 1,061,263 | 852 | 106 | 5 16 | 4.9 | | 31,748 23 | 156 | 7,350 |
| | 1915 | 67,441 19 | 1,767,519 | 7,338 | 22 | 82 | 3.8 | | 46,636 99 | 1,501,978 | 1,060 | 131 | 4 07 | 3.1 | | 32,126 50 | 140 | 8,538 |
| | 1916 | 72,875 12 | 2,131,307 | 7,912 | 23 | 80 | 3.4 | | 42,569 96 | 1,786,603 | 1,107 | 137 | 3 27 | 2.4 | | 42,996 39 | 188 | 9,207 |
| London | 1912 | 28,196 62 | ..... | 3,851 | ..... | ..... | ..... | 9+25 | 28,527 44 | ..... | 792 | ..... | ..... | ..... | 9+25 | 52,633 00 | 158 | 4,801 |
| | 1913 | 41,932 42 | 920,000 | 5,201 | 17 | 77 | 4.5 | | 39,256 07 | 1,350,000 | 1,007 | 125 | 3 63 | 3.0 | | 79,758 96 | 198 | 5,406 |
| | 1914 | 57,473 08 | 1,192,000 | 6,299 | 18 | 83 | 4.8 | | 47,593 44 | 1,580,000 | 1,075 | 127 | 3 81 | 3 | | 130,936 35 | 249 | 7,649 |
| | 1915 | 57,184 75 | 1,732,435 | 7,326 | 21 | 70 | 3.3 | | 43,751 37 | 1,452,896 | 1,046 | 137 | 3 44 | 3 | | 148,567 23 | 271 | 8,643 |
| | 1916 | 71,146 90 | 2,378,144 | 8,282 | 25 | 76 | 2.9 | | 48,747 74 | 1,930,269 | 1,129 | 147 | | 2.5 | | 180,204 33 | 295 | 9,706 |
| Brantford | 1914 | 7,103 77 | 148,427 | 1,184 | ..... | ..... | 4.8 | 8+13 | 5,392 87 | 166,469 | 300 | ..... | ..... | 3.6 | 8+13 | 647 69 | 11 | 1,495 |
| | 1915 | 13,629 36 | 319,439 | 1,615 | 19 | 82 | 4.3 | | 10,746 67 | 347,349 | 321 | 94 | 2 89 | 3.1 | | 12,901 29 | 18 | 1,954 |
| | 1916 | 17,504 44 | 468,324 | 2,056 | 21 | 79 | 3.7 | | 10,530 19 | 419,933 | 334 | 107 | 2 68 | 2.5 | | 24,213 00 | 26 | 2,316 |
| Windsor | 1914 | 3,143 41 | ..... | 1,802 | ..... | ..... | ..... | 12 | 1,107 38 | ..... | 257 | ..... | ..... | ..... | 8 | 9 77 | 10 | 2,069 |
| | 1915 | 23,161 57 | 468,386 | 2,519 | 18 | 89 | 4.9 | | 12,009 99 | 309,757 | 377 | 82 | 3 16 | 3.9 | | 3,734 81 | 43 | 2,939 |
| | 1916 | 35,565 79 | 726,442 | 3,180 | 21 | 104 | 4.9 | | 16,831 60 | 465,683 | 439 | 95 | 3 44 | 3.6 | | 7,370 82 | 66 | 3,685 |
| Peterborough | 1914 | 8,661 71 | ..... | 2,692 | ..... | ..... | ..... | | 7,749 91 | ..... | 507 | ..... | ..... | ..... | | 7,013 23 | 93 | 3,292 |
| | 1915 | 27,998 24 | ..... | 3,221 | ..... | 79 | ..... | Flat | 27,563 41 | ..... | 602 | ..... | 4 14 | ..... | Flat | 30,185 83 | 113 | 3,936 |
| | 1916 | 31,020 72 | 510,359 | 3,401 | 13 | 78 | 6.1 | | 26,403 82 | 467,663 | 602 | 65 | 3 66 | 5.6 | | 36,597 04 | 117 | 4,120 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kitchener | 1912 | 14,585 02 | ..... | 1,022 | ..... | ..... | ..... | 11+25 | 19,080 32 | ..... | 422 | ..... | ..... | ..... | 11+25 | 28,654 23 | 105 | 1,549 |
| | 1913 | 15,291 37 | ..... | 1,291 | ..... | 1 10 | ..... | | 19,548 91 | ..... | 470 | ..... | 3 65 | ..... | | 35,655 90 | 127 | 1,888 |
| | 1914 | 17,757 08 | 359,307 | 1,694 | 20 | 99 | 4.9 | | 19,549 45 | 562,630 | 519 | 95 | 3 29 | 3.5 | | 49,173 17 | 130 | 2,343 |
| | 1915 | 19,108 60 | 494,725 | 2,032 | 22 | 85 | 3.9 | | 16,807 15 | 579,303 | 546 | 91 | 2 63 | 2.9 | | 54,732 50 | 138 | 2,716 |
| | 1916 | 20,876 63 | 582,754 | 2,407 | 22 | 79 | 3.6 | | 17,323 67 | 801,789 | 543 | 123 | 2 65 | 2.2 | | 62,436 31 | 147 | 3,097 |
| St. Catharines | 1914 | 2,013 49 | 53,572 | 833 | ..... | ..... | 3.7 | 7 | 412 75 | 22,843 | 92 | ..... | ..... | 1.9 | 7 | 12,742 98 | 20 | 945 |
| | 1915 | 9,540 70 | 273,389 | 1,612 | 19 | 65 | 3.5 | | 3,810 11 | 196,056 | 192 | 115 | 2 23 | 1.9 | | 25,193 30 | 34 | 1,838 |
| | 1916 | 16,419 57 | 591,765 | 2,410 | 24 | 68 | 2.8 | | 5,925 49 | 318,877 | 247 | 121 | 2 25 | 1.5 | | 40,688 67 | 48 | 2,705 |
| St. Thomas | 1912 | 7,596 01 | ..... | 620 | ..... | ..... | ..... | 11 | 18,741 74 | ..... | 300 | ..... | ..... | ..... | 11 | 14,761 30 | 60 | 980 |
| | 1913 | 11,125 50 | 187,000 | 951 | 19 | 1 18 | 5.9 | | 16,097 41 | 272,000 | 329 | 72 | 4 26 | 5.9 | | 36,550 26 | 70 | 1,350 |
| | 1914 | 13,221 00 | 277,539 | 1,499 | 19 | 90 | 4.8 | | 13,480 75 | 346,994 | 384 | 81 | 3 15 | 3.9 | | 44,247 13 | 92 | 1,975 |
| | 1915 | 16,517 37 | 460,103 | 1,903 | 23 | 81 | 3.6 | | 13,422 48 | 504,679 | 434 | 102 | 2 73 | 2.7 | | 44,780 45 | 101 | 2,438 |
| | 1916 | 20,210 52 | 629,102 | 2,241 | 25 | 81 | 3.2 | | 15,145 47 | 607,131 | 464 | 93 | 2 81 | 2.5 | | 46,698 91 | 107 | 2,812 |
| Stratford | 1912 | 6,942 56 | ..... | 640 | ..... | 90 | ..... | 12+25 | 14,661 16 | ..... | 316 | ..... | 3 86 | ..... | 12+25 | 8,834 40 | 76 | 1,032 |
| | 1913 | 11,550 71 | ..... | 1,042 | ..... | 1 02 | ..... | | 17,072 61 | ..... | 367 | ..... | 4 15 | ..... | | 14,272 59 | 92 | 1,501 |
| | 1914 | 15,180 91 | 269,459 | 1,403 | 18 | 1 03 | 5.5 | | 16,336 30 | 345,639 | 396 | 76 | 3 55 | 4.7 | | 16,519 24 | 99 | 1,898 |
| | 1915 | 16,967 58 | 388,200 | 1,724 | 21 | 90 | 4.4 | | 14,766 75 | 400,686 | 439 | 79 | 2 92 | 3.7 | | 15,415 78 | 104 | 2,267 |
| | 1916 | 20,108 76 | 553,441 | 1,993 | 26 | 90 | 3.6 | | 14,803 08 | 601,616 | 463 | 110 | 2 75 | 2.5 | | 23,506 12 | 103 | 2,559 |
| Guelph | 1912 | 10,251 87 | ..... | 960 | ..... | ..... | ..... | 8+25 | 16,400 57 | ..... | 345 | ..... | ..... | ..... | 8+15 | 30,139 00 | 73 | 1,378 |
| | 1913 | 11,528 07 | 224,373 | 1,260 | 17 | 87 | 5.2 | | 15,075 61 | 287,561 | 400 | 67 | 3 38 | 5.2 | | 42,091 34 | 85 | 1,745 |
| | 1914 | 16,920 54 | 286,032 | 1,573 | 17 | 1 00 | 5.9 | | 15,923 51 | 325,080 | 441 | 65 | 3 16 | 4.9 | | 38,148 46 | 80 | 2,094 |
| | 1915 | 15,514 10 | 366,928 | 1,824 | 18 | 76 | 4.2 | | 12,692 86 | 437,567 | 474 | 83 | 2 32 | 2.8 | | 38,404 28 | 81 | 2,379 |
| | 1916 | 17,221 76 | 469,528 | 2,033 | 20 | 74 | 3.7 | | 13,710 72 | 522,526 | 490 | 91 | 2 36 | 2.6 | | 48,369 83 | 86 | 2,609 |
| Pt. Arthur | 1913 | 81,830 66 | ..... | 2,409 | ..... | ..... | ..... | 8+25 | * | ..... | 500 | ..... | ..... | ..... | 8+25 | 51,748 11 | 55 | 2,964 |
| | 1914 | 38,097 65 | ..... | 2,969 | ..... | ..... | ..... | | 32,933 91 | ..... | 550 | ..... | ..... | ..... | | 92,804 49 | 55 | 3,574 |
| | 1915 | 32,048 37 | ..... | 2,800 | ..... | ..... | ..... | | 28,662 58 | ..... | 550 | ..... | ..... | ..... | | 85,060 78 | 50 | 3,400 |
| | 1916 | | | | | | | | | | | | | | | | | |
| Chatham | 1915 | 5,581 54 | 110,552 | 949 | ..... | ..... | 5.5 | 8+25 | 2,806 81 | 81,805 | 180 | ..... | ..... | 3.4 | 8+25 | 449 70 | 7 | 1,136 |
| | 1916 | 10,155 37 | 176,508 | 1,171 | 14 | 80 | 5.8 | | 7,427 36 | 174,204 | 215 | 81 | 3 48 | 4.3 | | 3,766 37 | 25 | 1,401 |
| Owen Sound | 1916 | 16,003 61 | 225,620 | 1,376 | ..... | ..... | 7.1 | 6.4+15 | 23,724 21 | 388,717 | 435 | ..... | ..... | 6.1 | 6.4+15 | 13,772 61 | 83 | 1,894 |
| Galt | 1912 | 8,183 69 | ..... | 830 | ..... | 1 22 | ..... | 11 | 9,732 86 | ..... | 250 | ..... | ..... | ..... | 11 | 10,042 59 | 47 | 1,127 |
| | 1913 | 10,535 38 | ..... | 1,122 | ..... | 1 10 | ..... | | 11,648 49 | ..... | 353 | ..... | 3 25 | ..... | | 16,575 61 | 65 | 1,540 |
| | 1914 | 15,797 16 | 300,121 | 1,745 | 20 | 1 08 | 5.3 | | 11,952 75 | 289,857 | 339 | 68 | 2 80 | 4.1 | | 23,826 87 | 70 | 2,154 |
| | 1915 | 17,024 42 | 512,443 | 2,038 | 23 | 75 | 3.3 | | 8,794 36 | 350,788 | 375 | 92 | 2 10 | 2.3 | | 30,547 84 | 75 | 2,488 |
| | 1916 | 19,961 17 | 716,396 | 2,236 | 28 | 78 | 2.8 | | 10,485 26 | 532,860 | 386 | 115 | 2 30 | 2.0 | | 36,029 78 | 79 | 2,701 |
| Niagara Falls | 1916 | 21,733 29 | ..... | 2,050 | ..... | ..... | ..... | 3.5 | 13,259 02 | ..... | 400 | ..... | ..... | ..... | Flat | 9,613 01 | 80 | 2,530 |
| Woodstock | 1912 | 4,914 92 | ..... | 464 | ..... | ..... | ..... | 8+20 | 13,316 02 | ..... | 265 | ..... | ..... | ..... | 8+20 | 21,087 61 | 43 | 772 |
| | 1913 | 6,495 02 | 100,000 | 636 | 17 | 1 08 | 6.5 | | 12,942 32 | 298,000 | 282 | 77 | 3 95 | 5.2 | | 20,262 52 | 55 | 973 |
| | 1914 | 8,807 40 | 169,054 | 949 | 21 | 1 08 | 5.2 | | 11,610 14 | 289,982 | 337 | 78 | 3 12 | 4.0 | | 19,832 26 | 57 | 1,343 |
| | 1915 | 10,472 14 | 230,297 | 1,099 | 20 | 88 | 4.5 | | 11,718 95 | 371,787 | 360 | 90 | 2 80 | 3.1 | | 20,742 18 | 62 | 1,521 |
| | 1916 | 11,206 71 | 288,201 | 1,224 | 21 | 80 | 3.9 | | 12,983 32 | 503,977 | 372 | 114 | 2 95 | 2.6 | | 23,721 92 | 72 | 1,668 |
| Brockville | 1916 | 12,897 12 | 144,913 | 965 | ..... | ..... | 9.0 | 9 | 21,994 02 | 253,153 | 312 | ..... | ..... | 8.7 | 9 | 15,828 62 | 31 | 1,308 |

## STATEMENT "D"—Continued

Showing Comparative Revenue, Number of Customers, Total Kw-hr. Consumption, Average Monthly Consumption per Customer, Average Monthly Bill, and Net Cost per Kw-hr. for the Years 1912, 1913, 1914, 1915 and 1916.

| Municipality | Year | Domestic Light | | | | | | | Commercial Light | | | | | | | Power | | Total Number of Consumers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per kw-hr. | Net Cost prior to Hydro | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per kw-hr. | Net Cost prior to Hydro | Revenue | Number of Consumers | |
| | | $ c. | Kw-hrs. | | Kw-hr | $ c. | cents | cents | $ c. | Kw-hrs. | | Kw-hr | $ c. | cents | cents | $ c. | | |
| Welland | 1913 | 1,369 67 | ..... | 408 | ..... | ..... | ..... | 8+25 | 558 46 | ..... | 53 | ..... | ..... | ..... | 8+25 | 4,307 21 | 18 | 479 |
| | 1914 | 4,411 20 | 117,328 | 492 | 22 | 82 | 3.7 | | 1,676 38 | 64,449 | 53 | 100 | 2 64 | 2.6 | | 8,305 71 | 23 | 568 |
| | 1915 | 4,643 16 | 154,534 | 467 | 27 | 81 | 3.0 | | 1,600 79 | 69,340 | 57 | 105 | 2 42 | 2.3 | | 38,541 88 | 23 | 547 |
| | 1916 | 4,800 06 | 154,706 | 536 | 26 | 79 | 3.1 | | 1,580 48 | 94,582 | 75 | 141 | 2 40 | 1.7 | | 78,184 81 | 24 | 635 |
| Barrie | 1913 | 10,071 55 | ..... | 563 | ..... | ..... | ..... | 9 | 9,252 70 | ..... | 200 | ..... | 3 85 | ..... | 9 | 3,390 29 | 13 | 776 |
| | 1914 | 11,149 49 | 152,095 | 651 | 20 | 1 54 | 7.3 | | 9,464 64 | 138,948 | 200 | 58 | 3 93 | 6.8 | | 3,712 24 | 13 | 864 |
| | 1915 | 11,087 68 | 147,307 | 843 | 18 | 1 24 | 7.1 | | 9,572 91 | 177,000 | 252 | 65 | 3 50 | 5.4 | | 4,567 76 | 14 | 1,109 |
| | 1916 | 11,907 10 | 204,420 | 896 | 20 | 1 14 | 5.8 | | 10,635 67 | 189,409 | 257 | 63 | 3 50 | 5.6 | | 6,918 33 | 18 | 1,171 |
| Collingwood | 1913 | 7,013 66 | 83,406 | 477 | ..... | ..... | 8.4 | 11+10 | 9,362 17 | 108,676 | 220 | ..... | ..... | 8.4 | 11+10 | 896 72 | 18 | 715 |
| | 1914 | 7,857 86 | 103,598 | 554 | 16 | 1 27 | 7.6 | | 7,555 54 | 124,276 | 232 | 46 | 2 78 | 6.1 | | 5,165 39 | 21 | 807 |
| | 1915 | 7,094 27 | 118,336 | 622 | 17 | 1 00 | 6.0 | | 5,688 26 | 116,583 | 233 | 42 | 2 04 | 4.9 | | 9,527 70 | 26 | 881 |
| | 1916 | 8,320 44 | 162,464 | 714 | 20 | 1 04 | 5.1 | | 6,213 86 | 163,956 | 242 | 58 | 2 18 | 3.8 | | 23,152 41 | 33 | 989 |
| Midland | 1912 | 5,878 05 | ..... | 420 | ..... | ..... | ..... | 9 | 5,878 05 | ..... | 165 | ..... | ..... | ..... | 9 | 3,188 03 | 18 | 603 |
| | 1913 | 6,095 11 | 88,228 | 491 | 16 | 1 11 | 6.9 | | 6,104 16 | 118,267 | 172 | 58 | 3 01 | 5.1 | | 5,700 22 | 25 | 688 |
| | 1914 | 6,941 07 | 127,397 | 621 | 19 | 1 06 | 5.5 | | 5,084 06 | 117,741 | 176 | 56 | 2 44 | 4.3 | | 6,484 43 | 32 | 829 |
| | 1915 | 6,580 45 | 199,257 | 689 | 25 | 84 | 3.3 | | 4,462 54 | 97,300 | 188 | 45 | 2 05 | 4.6 | | 10,229 52 | 39 | 916 |
| | 1916 | 7,145 74 | 180,735 | 732 | 21 | 83 | 4.0 | | 4,624 85 | 186,953 | 184 | 84 | 2 07 | 2.5 | | 12,262 89 | 31 | 947 |
| Ingersoll | 1912 | 3,073 73 | ..... | 220 | ..... | ..... | ..... | 8+25 | 6,648 28 | ..... | 142 | ..... | ..... | ..... | 8+25 | 14,430 66 | 38 | 400 |
| | 1913 | 3,595 03 | 43,406 | 278 | 14 | 1 20 | 8.3 | | 6,048 51 | 81,724 | 170 | 44 | 3 23 | 7.4 | | 15,293 44 | 44 | 492 |
| | 1914 | 5,085 32 | 68,342 | 416 | 12 | 1 22 | 7.5 | | 6,359 72 | 106,689 | 194 | 46 | 2 32 | 5.9 | | 12,818 27 | 48 | 658 |
| | 1915 | 5,480 52 | 102,537 | 497 | 19 | 1 00 | 5.3 | | 5,716 91 | 139,428 | 197 | 60 | 2 46 | 4.1 | | 16,251 18 | 52 | 746 |
| | 1916 | 6,857 94 | 127,449 | 590 | 20 | 1 05 | 5.4 | | 6,540 51 | 176,757 | 206 | 73 | 2 70 | 3.7 | | 20,380 90 | 51 | 847 |
| Walkerville | 1914 | 3,037 96 | ..... | 790 | ..... | ..... | ..... | 15—5 | 1,492 84 | ..... | 175 | ..... | ..... | ..... | 15-10-5 | 6,042 11 | 75 | 1,040 |
| | 1915 | 13,036 98 | 241,771 | 1,159 | 21 | 1 12 | 5.4 | | 7,836 93 | 157,198 | 195 | 70 | 3 49 | 4.4 | | 39,523 81 | 72 | 1,421 |
| | 1916 | 18,813 06 | 391,629 | 1,513 | 27 | 1 34 | 4.8 | | 12,104 72 | 309,727 | 216 | 126 | 4 61 | 3.9 | | 77,003 07 | 75 | 1,804 |
| Waterloo | 1912 | 4,057 46 | ..... | 239 | ..... | ..... | ..... | 12+25 | 4,524 93 | ..... | 112 | ..... | ..... | ..... | 12+25 | 11,545 93 | 35 | 386 |
| | 1913 | 4,263 66 | 69,576 | 321 | 21 | 1 27 | 6.1 | | 5,098 42 | 87,718 | 125 | 62 | 3 58 | 5.8 | | 14,970 14 | 44 | 490 |
| | 1914 | 4,723 94 | 85,199 | 430 | 19 | 1 05 | 5.5 | | 4,825 22 | 98,924 | 153 | 59 | 2 90 | 5. | | 13,282 14 | 51 | 634 |
| | 1915 | 5,401 82 | 106,570 | 524 | 19 | 94 | 5.1 | | 5,284 87 | 107,821 | 162 | 57 | 2 80 | 4.9 | | 15,125 32 | 53 | 739 |
| | 1916 | 5,454 60 | 145,196 | 592 | 22 | 81 | 3.8 | | 4,750 09 | 130,418 | 150 | 69 | 2 54 | 3.6 | | 17,905 45 | 50 | 792 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Goderich | 1914 | 7,197 05 | 83,805 | 400 | ..... | ..... | 8.6 | 9 | 4,196 49 | 79,874 | 155 | ..... | ..... | 5.3 | 9 | 1,240 73 | 10 | 565 |
| | 1915 | 6,072 51 | 92,406 | 441 | 18 | 1 20 | 6.6 | | 5,066 76 | 121,559 | 168 | 62 | 2 60 | 4.1 | | 5,645 26 | 8 | 617 |
| | 1916 | 7,086 32 | 108,654 | 511 | 19 | 1 24 | 6.5 | | 5,253 15 | 98,221 | 159 | 50 | 2 68 | 5.4 | | 5,498 56 | 9 | 679 |
| Dundas | 1913 | 3,045 85 | ..... | 377 | ..... | ..... | ..... | 10+25 | 4,193 27 | ..... | 134 | ..... | ..... | ..... | 10+25 | 3,070 40 | 27 | 538 |
| | 1914 | 5,349 24 | 92,168 | 520 | 19 | 99 | 5.8 | | 4,198 64 | 119,947 | 153 | 69 | 2 44 | 3.5 | | 4,305 96 | 30 | 703 |
| | 1915 | 6,139 97 | 128,600 | 613 | 19 | 90 | 4.8 | | 4,310 96 | 157,477 | 160 | 84 | 2 29 | 2.7 | | 5,930 54 | 37 | 810 |
| | 1916 | 6,925 46 | 146,710 | 673 | 19 | 89 | 4.8 | | 4,714 78 | 179,151 | 168 | 91 | 2 39 | 2.6 | | 10,915 58 | 35 | 876 |
| Preston | 1912 | 4,234 68 | ..... | 341 | ..... | ..... | ..... | 9+20 | 5,237 99 | ..... | 131 | ..... | ..... | ..... | 9+20 | 15,478 14 | 21 | 492 |
| | 1913 | 5,477 10 | 83,852 | 526 | 16 | 1 05 | 6.5 | | 5,366 77 | 103,000 | 151 | 61 | 3 18 | 5.2 | | 21,017 68 | 28 | 705 |
| | 1914 | 6,520 39 | 108,257 | 629 | 14 | 90 | 6. | | 5,011 15 | 106,675 | 165 | 56 | 2 64 | 4.7 | | 21,975 26 | 29 | 823 |
| | 1915 | 6,615 91 | 129,896 | 714 | 16 | 82 | 5.1 | | 4,488 76 | 118,756 | 174 | 58 | 2 21 | 3.8 | | 21,698 34 | 30 | 918 |
| | 1916 | 7,341 15 | 186,361 | 785 | 21 | 82 | 3.9 | | 4,779 76 | 155,325 | 182 | 72 | 2 24 | 3.1 | | 22,624 37 | 34 | 1,001 |
| Paris | 1914 | 4,766 23 | 65,037 | 354 | ..... | ..... | ..... | 7+10 | 2,778 09 | 65,108 | 142 | ..... | ..... | 4.3 | 8+20 | 1,419 90 | 1 | 497 |
| | 1915 | 5,071 54 | 87,239 | 477 | 17 | 1 01 | 5.8 | | 4,063 03 | 100,259 | 150 | 57 | 2 32 | 4.1 | | 6,328 33 | 4 | 631 |
| | 1916 | 5,877 57 | 127,382 | 552 | 21 | 96 | 4.6 | | 3,805 95 | 96,750 | 150 | 53 | 2 11 | 3.9 | | 8,974 66 | 4 | 706 |
| Wallaceburg | 1915 | 4,079 74 | 56,482 | 368 | ..... | ..... | 7.2 | 11 | 4,239 30 | 63,747 | 161 | ..... | ..... | 6.6 | 10 | 87 32 | 2 | 531 |
| | 1916 | 5,095 45 | 68,988 | 438 | 15 | 1 05 | 7.4 | | 4,589 30 | 67,718 | 354 | 22 | 1 48 | 6.8 | | 5,866 32 | 5 | 593 |
| Simcoe | 1915 | 351 67 | 5,227 | 35 | ..... | ..... | 6.7 | | 1,386 89 | 26,852 | 61 | ..... | ..... | 5.1 | | 766 42 | 8 | 104 |
| | 1916 | 1,857 61 | 13,238 | 57 | ..... | ..... | 6.5 | | 2,292 28 | 46,254 | 84 | 53 | 2 63 | 5.0 | | 1,386 33 | 12 | 153 |
| Brampton | 1912 | 3,004 66 | ..... | 409 | ..... | ..... | ..... | 9+15 | 2,893 74 | ..... | 104 | ..... | ..... | ..... | 9+15 | 3,531 34 | 12 | 525 |
| | 1913 | 5,617 61 | ..... | 643 | ..... | ..... | ..... | | 3,986 65 | ..... | 138 | ..... | ..... | ..... | | 10,557 72 | 16 | 797 |
| | 1914 | 6,798 89 | 142,178 | 627 | 18 | 89 | 4.9 | | 4,055 99 | 101,751 | 174 | 55 | 2 17 | 4.0 | | 10,658 33 | 21 | 822 |
| | 1915 | 6,860 48 | 159,435 | 691 | 20 | 86 | 4.3 | | 4,053 56 | 116,717 | 174 | 56 | 1 94 | 3.5 | | 11,624 83 | 21 | 886 |
| | 1916 | 6,660 66 | 165,435 | 722 | 20 | 79 | 4.0 | | 4,013 51 | 153,542 | 175 | 73 | 1 92 | 2.6 | | 12,922 72 | 24 | 921 |
| St. Mary's | 1912 | 4,967 16 | ..... | 240 | ..... | ..... | ..... | 9+15 | 4,069 20 | ..... | 143 | ..... | ..... | ..... | 9+15 | 6,001 30 | 20 | 403 |
| | 1913 | 3,815 77 | 44,801 | 396 | 12 | 1 00 | 8.5 | | 4,553 73 | 62,486 | 160 | 34 | 2 50 | 7.3 | | 8,221 72 | 29 | 588 |
| | 1914 | 4,614 95 | 67,375 | 454 | 13 | 90 | 6.7 | | 4,733 33 | 75,257 | 161 | 39 | 2 46 | 6.3 | | 10,610 05 | 30 | 645 |
| | 1915 | 5,073 97 | 72,819 | 528 | 12 | 86 | 6.9 | | 4,222 53 | 75,644 | 151 | 40 | 2 25 | 5.5 | | 8,379 87 | 33 | 712 |
| | 1916 | 5,020 33 | 127,274 | 563 | 19 | 77 | 3.9 | | 3,161 26 | 79,768 | 161 | 42 | 1 69 | 4.0 | | 9,266 74 | 28 | 752 |
| Penetang | 1912 | 1,676 26 | ..... | 101 | ..... | ..... | ..... | 9 | 3,836 30 | ..... | 87 | ..... | ..... | ..... | 9 | 2,207 51 | 13 | 201 |
| | 1913 | 1,989 80 | 27,199 | 128 | 19 | 1 44 | 7.3 | | 4,511 16 | 58,111 | 91 | 55 | 4 23 | 7.7 | | 8,775 95 | 15 | 234 |
| | 1914 | 1,936 73 | 35,163 | 153 | 21 | 1 15 | 5.5 | | 3,064 83 | 66,489 | 100 | 58 | 2 68 | 4.6 | | 8,001 69 | 15 | 268 |
| | 1915 | 2,050 69 | 42,843 | 174 | 22 | 1 04 | 4.8 | | 2,676 60 | 78,657 | 102 | 65 | 2 21 | 3.4 | | 10,048 08 | 15 | 291 |
| | 1916 | 2,317 37 | 49,242 | 189 | 23 | 1 06 | 4.7 | | 2,706 74 | 83,448 | 95 | 71 | 2 30 | 3.2 | | 11,650 03 | 16 | 290 |
| Tillsonburg | 1912 | 3,233 92 | ..... | 200 | ..... | ..... | ..... | 11+25 | 3,350 91 | ..... | 128 | ..... | ..... | ..... | 11+25 | 3,283 75 | 6 | 334 |
| | 1913 | 2,796 57 | 29,115 | 254 | 10 | 1 03 | 9.6 | | 4,677 38 | 66,049 | 143 | 41 | 2 87 | 7.8 | | 4,763 15 | 17 | 414 |
| | 1914 | 3,367 74 | 45,937 | 300 | 14 | 1 02 | 7.3 | | 4,579 37 | 70,265 | 160 | 38 | 2 52 | 6.5 | | 6,303 09 | 16 | 476 |
| | 1915 | 3,203 51 | 55,346 | 348 | 14 | 83 | 5.7 | | 4,236 42 | 74,564 | 161 | 38 | 2 19 | 5.7 | | 5,619 15 | 15 | 524 |
| | 1916 | 4,009 67 | 72,975 | 375 | 18 | 1 02 | 5.5 | | 4,493 41 | 95,326 | 188 | 46 | 2 14 | 4.7 | | 5,692 05 | 17 | 580 |
| Strathroy | 1915 | 3,380 78 | 36,200 | 233 | ..... | ..... | 9.3 | 12+25 | 4,701 76 | 50,469 | 147 | ..... | ..... | 9.3 | 12+25 | 700 49 | 5 | 385 |
| | 1916 | 3,318 45 | 51,197 | 314 | 16 | 1 01 | 6.5 | | 3,817 38 | 66,325 | 152 | 37 | 2 12 | 5.8 | | 2,927 36 | 8 | 574 |

## STATEMENT "D"—Continued

**Showing Comparative Revenue, Number of Customers, Total Kw-hr. Consumption, Average Monthly Consumption per Customer, Average Monthly Bill, and Net Cost per Kw-hr. for the Years 1912, 1913, 1914, 1915 and 1916**

| Municipality | Year | Domestic Light | | | | | | | Commercial Light | | | | | | | Power | | Total Number of Consumers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per Kw-hr | Net Cost prior to Hydro | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per Kw-hr | Net Cost prior to Hydro | Revenue | Number of Consumers | |
| | | $ c. | Kw-hrs. | | Kw-hr | $ c. | Cents | Cents | $ c. | Kw-hrs. | | Kw-hr | $ c. | Cents | Cents | $ c. | | |
| Hespeler | 1913 | 2,189 00 | ..... | 174 | ..... | ..... | ..... | 10+15 | 1,684 75 | ..... | 76 | ..... | ..... | ..... | 10+15 | 5,044 30 | 11 | 261 |
| | 1914 | 2,635 41 | 34,848 | 229 | 14 | 1 09 | 7.6 | | 1,934 75 | 35,979 | 85 | 37 | 2 00 | 5.4 | | 6,116 27 | 13 | 327 |
| | 1915 | 2,787 48 | 39,580 | 272 | 11 | 90 | 7.0 | | 2,334 15 | 39,657 | 90 | 38 | 2 22 | 5.9 | | 9,017 58 | 14 | 376 |
| | 1916 | 3,011 73 | 54,239 | 277 | 17 | 92 | 5.5 | | 2,012 28 | 44,900 | 84 | 43 | 1 93 | 4.5 | | 11,177 71 | 12 | 273 |
| Prescott | 1914 | 4,868 75 | ..... | 342 | ..... | ..... | ..... | 9 | 3,600 00 | ..... | 122 | ..... | ..... | ..... | 9 | 1,099 27 | 10 | 474 |
| | 1915 | 4,058 14 | 67,130 | 369 | 16 | 95 | 6.0 | | 3,033 62 | 62,647 | 145 | 39 | 1 89 | 4.8 | | 3,431 45 | 11 | 525 |
| | 1916 | 4,186 96 | 63,304 | 380 | 15 | 93 | 6.6 | | 3,611 95 | 71,794 | 133 | 43 | 2 16 | 5.0 | | 4,141 90 | 22 | 525 |
| Ridgetown | 1916 | 2,173 64 | 24,975 | 174 | ..... | ..... | 8.7 | 10+25 | 2,838 32 | 32,594 | 101 | ..... | ..... | 8.7 | 10+25 | 740 86 | 3 | 278 |
| Elmira | 1914 | 1,908 41 | 20,875 | 158 | ..... | ..... | 9.5 | 11.4+10 | 2,020 81 | 28,490 | 65 | ..... | ..... | 7.1 | 11.4+1 | 1,876 49 | 8 | 231 |
| | 1915 | 2,059 11 | 27,576 | 185 | 13 | 1 00 | 7.5 | | 1,674 44 | 28,368 | 85 | 32 | 1 85 | 5.9 | | 2,801 33 | 10 | 280 |
| | 1916 | 2,211 16 | 30,817 | 233 | 12 | 88 | 7.2 | | 1,665 69 | 35,414 | 92 | 33 | 1 56 | 4.7 | | 3,635 22 | 12 | 338 |
| Weston | 1912 | 3,979 81 | ..... | 225 | ..... | ..... | ..... | 7.2+22.5 | 750 00 | ..... | 15 | ..... | ..... | ..... | 7.2+22.5 | 1,674 28 | 4 | 344 |
| | 1913 | 4,117 20 | ..... | 360 | ..... | ..... | ..... | | 1,475 74 | ..... | 34 | ..... | ..... | ..... | | 6,166 97 | 6 | 400 |
| | 1914 | 3,741 84 | 79,766 | 352 | 17 | 80 | 4.7 | | 1,599 97 | 26,774 | 78 | 40 | 2 38 | 6.0 | | 4,958 59 | 10 | 440 |
| | 1915 | 4,407 36 | 96,186 | 441 | 21 | 93 | 4.6 | | 1,305 90 | 27,564 | 90 | 27 | 1 30 | 4.7 | | 4,798 33 | 9 | 540 |
| | 1916 | 5,477 65 | 135,272 | 475 | 25 | 100 | ..... | | 1,407 31 | 31,898 | 88 | 30 | 1 31 | ..... | | 5,202 84 | 11 | 574 |
| Clinton | 1914 | 2,023 70 | 21,466 | 179 | ..... | ..... | 9.4 | 10+25 | 2,028 08 | 24,696 | 111 | ..... | ..... | 8.2 | 10+25 | 1,255 33 | 7 | 297 |
| | 1915 | 2,930 57 | 36,598 | 204 | 16 | 1 28 | 8.2 | | 3,068 63 | 40,234 | 110 | 20 | 2 31 | 7.6 | | 2,018 24 | 6 | 320 |
| | 1916 | 3,161 29 | 41,986 | 211 | 17 | 1 27 | 7.5 | | 3,064 37 | 41,205 | 112 | 31 | 2 30 | 7.4 | | 2,498 64 | 7 | 330 |
| Milton | 1913 | 1,149 28 | ..... | 110 | ..... | ..... | ..... | | 1,212 26 | ..... | 74 | ..... | ..... | ..... | | 6,462 38 | 5 | 189 |
| | 1914 | 1,961 22 | 25,649 | 150 | 19 | 1 51 | 7.6 | 10 | 2,226 80 | 41,015 | 79 | 44 | 2 43 | 5.4 | 10 | 11,325 61 | 6 | 235 |
| | 1915 | 1,981 80 | 28,900 | 170 | 15 | 1 03 | 6.8 | | 1,900 98 | 41,520 | 80 | 44 | 2 00 | 4.6 | | 5,364 29 | 7 | 257 |
| | 1916 | 2,219 28 | 36,573 | 197 | 16 | 1 01 | ..... | | 1,892 21 | 44,445 | 84 | 45 | 1 93 | ..... | | 10,428 79 | 6 | 287 |
| Mimico | 1913 | 2,021 06 | ..... | 250 | ..... | ..... | ..... | | * | ..... | * | ..... | ..... | ..... | 8+25 | 795 49 | 5 | 255 |
| | 1914 | 5,085 16 | 91,184 | 462 | ..... | ..... | 5.4 | 8+25 | * | 3,462 | 10 | ..... | ..... | 5.4 | | 963 64 | 5 | 477 |
| | 1915 | 5,748 44 | 105,884 | 609 | 17 | 90 | 5.4 | | 346 49 | 6,551 | 7 | 40 | 2 14 | 5.3 | | 1,042 11 | 3 | 619 |
| | 1916 | 7,011 08 | 137,318 | 621 | 18 | 95 | 5.1 | | 506 44 | 10,982 | 31 | 38 | 1 76 | 4.6 | | 1,449 14 | 8 | 660 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seaforth | 1913 | 2,124 18 | 24,665 | 178 | ..... | ..... | 8.6 | 8 + 25 | 2,876 47 | 34,789 | 105 | ..... | ..... | 8.3 | 8 +25 | 7,509 99 | 10 | 293 |
| | 1914 | 2,467 36 | 37,453 | 211 | 16 | 1 06 | 6.8 | | 2,581 30 | 45,492 | 112 | 35 | 1 98 | 5.6 | | 7,707 01 | 10 | 333 |
| | 1915 | 2,593 70 | 43,162 | 238 | 16 | 96 | 6.0 | | 2,724 84 | 48,840 | 111 | 37 | 2 03 | 5.6 | | 7,685 52 | 11 | 360 |
| | 1916 | 3,045 65 | 51,884 | 280 | 17 | 97 | 5.9 | | 2,941 03 | 56,380 | 110 | 43 | 2 22 | 5.2 | | 9,684 11 | 12 | 402 |
| Fergus | 1915 | 1,314 03 | 19,328 | 114 | ..... | ..... | 6.8 | 10 + 25 | 2,367 91 | 37,844 | 91 | ..... | ..... | 6.3 | 10 + 25 | 882 24 | 7 | 212 |
| | 1916 | 1,621 27 | 24,275 | 149 | 16 | 1 03 | 6.7 | | 2,111 16 | 34,953 | 92 | 32 | 2 00 | 6.0 | | 2,819 21 | 7 | 248 |
| Mt. Forest | 1916 | 1,967 03 | 27,337 | 106 | ..... | ..... | 7.2 | 10 | 2,420 75 | 39,059 | 164 | ..... | ..... | 6.2 | 10 | 1,739 79 | 7 | 277 |
| Palmerston | 1916 | 6,102 25 | ..... | 151 | ..... | ..... | ..... | Flat | 282 57 | ..... | 63 | ..... | ..... | ..... | Flat | ..... | 1 | 215 |
| Durham | 1916 | 1,518 72 | 17,091 | 155 | ..... | ..... | 8.9 | Flat | 1,057 33 | 13,949 | 67 | ..... | ..... | 8.8 | Flat | ..... | ..... | 222 |
| Georgetown | 1913 | 661 49 | ..... | 160 | ..... | ..... | ..... | | 842 87 | ..... | 50 | ..... | ..... | ..... | | 234 32 | 5 | 285 |
| | 1914 | 3,069 02 | 42,328 | 242 | 17 | 1 27 | 7.2 | 10 + 10 | 2,362 33 | 29,544 | 75 | 59 | 3 15 | 8 | 10 + 10 | 2,976 61 | 17 | 334 |
| | 1915 | 2,999 83 | 43,392 | 294 | 14 | 93 | 6.9 | | 2,276 41 | 35,318 | 97 | 34 | 2 20 | 8.9 | | 8,734 01 | 16 | 407 |
| | 1916 | 3,174 63 | 56,191 | 306 | 16 | 88 | 5.6 | | 2,101 00 | 53,129 | 99 | 45 | 1 79 | 3.3 | | 10,726 24 | 21 | 426 |
| Tilbury | 1915 | 979 57 | ..... | 123 | ..... | ..... | ..... | 10 | 1,476 53 | ..... | 67 | ..... | ..... | ..... | 10 | ..... | ..... | 190 |
| | 1916 | 1,507 37 | 21,483 | 127 | 14 | 1 00 | 6.5 | | 2,071 77 | 32,612 | 79 | 37 | 2 36 | 4.5 | | 149 60 | 2 | 218 |
| Acton | 1913 | 1,236 50 | ..... | 82 | ..... | ..... | ..... | 10 | 1,567 48 | ..... | 62 | ..... | ..... | ..... | 10 | 318 77 | 3 | 147 |
| | 1914 | 1,463 72 | 21,192 | 146 | 15 | ..... | 6.9 | | 1,496 18 | 19,878 | 58 | 28 | 2 08 | 7.5 | | 836 13 | 5 | 209 |
| | 1915 | 1,931 11 | 29,079 | 183 | 15 | ..... | 6.6 | | 1,725 73 | 24,336 | 53 | 36 | 2 59 | 7.1 | | 1,019 27 | 5 | 241 |
| | 1916 | 1,942 11 | 29,685 | 185 | 15 | ..... | 6.5 | | 1,592 62 | 35,227 | 60 | 52 | 2 35 | 4.5 | | 1,565 53 | 7 | 252 |
| Mitchell | 1912 | 2,964 48 | ..... | 159 | ..... | ..... | ..... | | 2,977 08 | ..... | 79 | ..... | ..... | ..... | | 4,597 03 | 13 | 251 |
| | 1913 | 2,362 52 | ..... | 179 | ..... | ..... | ..... | Flat | 2,813 92 | ..... | 85 | ..... | ..... | ..... | Flat | 6,160 53 | 16 | 270 |
| | 1914 | 2,470 29 | ..... | 191 | ..... | ..... | ..... | | 2,712 55 | ..... | 100 | ..... | ..... | ..... | | 3,944 91 | 16 | 307 |
| | 1915 | 2,379 58 | ..... | 190 | ..... | ..... | ..... | | 2,684 01 | ..... | 95 | ..... | ..... | ..... | | 2,333 08 | 17 | 292 |
| | 1916 | 2,311 80 | 33,759 | 218 | 14 | 95 | 6.8 | | 2,677 35 | 39,211 | 103 | 33 | 2 25 | 6.8 | | 3,231 56 | 21 | 342 |
| New Hamburg | 1912 | 1,195 08 | ..... | 124 | ..... | ..... | ..... | 10 | 1,423 35 | ..... | 63 | ..... | ..... | ..... | 10 | 3,369 05 | 5 | 192 |
| | 1913 | 1,589 21 | ..... | 142 | ..... | ..... | ..... | | 1,890 72 | ..... | 63 | ..... | ..... | ..... | | 5,792 20 | 8 | 213 |
| | 1914 | 1,779 90 | 23,010 | 170 | 12 | 89 | 7.7 | | 1,403 56 | 19,404 | 68 | 25 | 1 78 | 7.2 | | 5,209 51 | 6 | 244 |
| | 1915 | 1,888 04 | 33,913 | 187 | 16 | 88 | 4.9 | | 1,273 38 | 23,041 | 70 | 27 | 1 54 | 5.5 | | 2,825 57 | 4 | 261 |
| | 1916 | 1,816 44 | 37,109 | 196 | 16 | 79 | 5.5 | | 1,211 25 | 26,492 | 70 | 32 | 1 39 | 4.6 | | 1,646 90 | 4 | 270 |
| Dresden | 1915 | 1,095 68 | ..... | 185 | ..... | ..... | ..... | | 1,223 25 | ..... | 109 | ..... | ..... | ..... | | ..... | ..... | 294 |
| | 1916 | 1,995 51 | 26,473 | 197 | 12 | 87 | 7.5 | Flat | 1,986 21 | 30,352 | 106 | 24 | 1 54 | 6.5 | Flat | ..... | ..... | 303 |
| VictoriaHarbor | 1915 | 105 79 | ..... | 56 | ..... | ..... | ..... | | 117 85 | ..... | 34 | ..... | ..... | ..... | | ..... | ..... | 90 |
| | 1916 | 642 29 | ..... | 65 | ..... | ..... | ..... | | 1,171 37 | ..... | 31 | ..... | ..... | ..... | | ..... | ..... | 96 |
| Pt. Dalhousie | 1913 | 3,742 54 | ..... | 238 | ..... | ..... | ..... | | * | ..... | * | ..... | ..... | ..... | | 347 28 | 3 | 241 |
| | 1914 | 3,656 01 | ..... | 240 | ..... | ..... | ..... | Flat | * | ..... | 10 | ..... | ..... | ..... | Flat | 429 54 | 3 | 253 |
| | 1915 | 3,608 70 | ..... | 250 | ..... | ..... | ..... | | ..... | ..... | 10 | ..... | ..... | ..... | | 252 12 | 2 | 262 |
| | 1916 | 2,868 05 | ..... | 330 | ..... | ..... | ..... | | 782 99 | ..... | 32 | ..... | ..... | ..... | | 339 12 | 8 | 370 |
| Caledonia | 1913 | 404 60 | ..... | 17 | ..... | ..... | ..... | | * | ..... | 16 | ..... | ..... | ..... | | 470 34 | 1 | 34 |
| | 1914 | 880 54 | ..... | 21 | ..... | ..... | ..... | None | * | ..... | 32 | ..... | ..... | ..... | None | 188 54 | 1 | 54 |
| | 1915 | 265 62 | 4,618 | 24 | 16 | 98 | 5.4 | | 950 38 | 18,325 | 33 | 47 | 2 44 | 5.4 | | 138 42 | 1 | 58 |
| | 1916 | 263 39 | 4,800 | 27 | 16 | 86 | 5.5 | | 777 38 | 20,000 | 37 | 47 | 1 85 | 4. | | 519 82 | 3 | 67 |

## STATEMENT "D"—Continued

Showing Comparative Revenue, Number of Customers, Total Kw-hr. Consumption, Average Monthly Consumption per Customer, Average Monthly Bill, and Net Cost per Kw-hr. for the Years 1912, 1913, 1914, 1915 and 1916

| Municipality | Year | Domestic Light | | | | | | | Commercial Light | | | | | | | Power | | Total Number Consumers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per Kw-hr. | Net Cost prior to Hydro | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per Kw-hr. | Net Cost prior to Hydro | Revenue | Number of Consumers | |
| | | $ c. | Kw-hrs. | | Kw-hr | $ c. | Cents | Cents | $ c. | Kw-hrs. | | Kw-hr | $ c. | Cents | Cents | $ c. | | |
| Norwich | 1912 | 862 17 | ..... | 128 | ..... | ..... | ..... | 10 + 25 | 674 48 | ..... | 64 | ..... | ..... | ..... | 10 + 25 | 263 93 | 2 | 194 |
| | 1913 | 1,926 78 | 28,172 | 166 | 15 | 1 09 | 6.8 | | 1,162 98 | 17,917 | 76 | 20 | 1 38 | 6.5 | | 1,978 55 | 3 | 245 |
| | 1914 | 2,168 13 | 35,578 | 198 | 16 | 99 | 6.2 | | 995 16 | 20,690 | 84 | 22 | 1 04 | 6.4 | | 1,893 72 | 3 | 285 |
| | 1915 | 2,529 91 | 37,082 | 228 | 16 | 99 | 6.2 | | 1,075 79 | 25,880 | 80 | 26 | 1 09 | 4.2 | | 2,169 31 | 5 | 313 |
| | 1916 | 2,319 58 | 49,858 | 234 | 18 | 84 | 4.7 | | 1,168 34 | 24,909 | 87 | 25 | 1 16 | 4.7 | | 2,642 97 | 6 | 327 |
| New Toronto | 1914 | 653 50 | 11,947 | 100 | ..... | ..... | 7.0 | 8 + 25 | ..... | ..... | 4 | ..... | ..... | 7.0 | 8 + 25 | ..... | 1 | 105 |
| | 1915 | 1,416 10 | 19,520 | 153 | ..... | ..... | 5.5 | | ..... | ..... | 8 | ..... | ..... | 5.5 | | 2,140 36 | 2 | 163 |
| | 1916 | 1,571 03 | 29,162 | 210 | ..... | ..... | 5.4 | | 143 32 | 5,956 | 10 | ..... | ..... | 5.4 | | 9,744 31 | 4 | 224 |
| Waterford | 1915 | 685 22 | ..... | 75 | ..... | ..... | ..... | | 546 08 | ..... | 40 | ..... | ..... | ..... | | ..... | ..... | 115 |
| | 1916 | 1,112 28 | 14,220 | 99 | 14 | 1 08 | 7.8 | 10 | 796 50 | 9,827 | 42 | 20 | 1 62 | 8.1 | 10 | 1,007 74 | 2 | 143 |
| Elora | 1915 | 1,044 49 | 14,009 | 89 | ..... | ..... | 7.4 | 10 + 25 | 1,820 07 | 25,431 | 60 | ..... | ..... | 7.1 | 10 + 25 | 197 78 | 1 | 150 |
| | 1916 | 1,253 03 | 20,500 | 105 | 18 | 1 08 | 6.1 | | 1,828 25 | 27,945 | 63 | 38 | 2 48 | 6.5 | | 972 12 | 2 | 170 |
| Hagersville | 1913 | 81 92 | ..... | 3 | ..... | ..... | ..... | | * | ..... | 24 | ..... | ..... | ..... | | 746 85 | 3 | 30 |
| | 1914 | 1,222 23 | 16,053 | 70 | ..... | ..... | 5.4 | None | * | 6,446 | 60 | ..... | ..... | 5.4 | None | 2,679 08 | 3 | 133 |
| | 1915 | 1,172 85 | 23,213 | 114 | 21 | 1 06 | 5.1 | | 1,592 59 | 22,676 | 73 | 28 | 1 99 | 5.2 | | 2,434 62 | 3 | 190 |
| | 1916 | 1,606 80 | 30,025 | 127 | 21 | 1 11 | 5.4 | | 1,343 82 | 27,840 | 69 | 32 | 1 58 | 4.8 | | 2,527 92 | 4 | 200 |
| Winchester | 1914 | 1,672 09 | ..... | 103 | ..... | ..... | ..... | | 1,300 00 | ..... | 50 | ..... | ..... | ..... | | ..... | ..... | 153 |
| | 1915 | 1,698 40 | 28,610 | 120 | 21 | 1 27 | 5.9 | 15 | 1,336 85 | 17,550 | 30 | 50 | 2 23 | 7.6 | 15 | ..... | 1 | 171 |
| | 1916 | 1,812 29 | 36,931 | 135 | 24 | 1 18 | 5.4 | | 1,364 47 | 21,999 | 46 | 38 | 2 37 | 6.2 | | 227 52 | 1 | 182 |
| Pt. Credit | 1913 | 1,963 22 | ..... | 93 | ..... | ..... | ..... | | * | ..... | 21 | ..... | ..... | ..... | | 848 59 | 2 | 116 |
| | 1914 | 2,461 42 | 41,862 | 125 | ..... | ..... | 6.0 | None | * | ..... | 35 | ..... | ..... | 6.0 | None | 308 88 | 2 | 162 |
| | 1915 | 1,975 29 | 36,484 | 141 | 23 | 1 24 | 5.4 | | 587 11 | 17,934 | 33 | 44 | 1 18 | 3.3 | | 236 47 | 3 | 177 |
| | 1916 | 1,781 49 | 44,251 | 145 | 26 | 1 04 | 4.0 | | 464 02 | 13,800 | 33 | 35 | 1 17 | 3.3 | | 257 40 | 3 | 181 |
| Beaverton | 1915 | 1,484 62 | ..... | 131 | ..... | ..... | ..... | | 1,149 67 | ..... | 56 | ..... | ..... | ..... | | 456 74 | 5 | 192 |
| | 1916 | 1,417 39 | 20,685 | 131 | 13 | 90 | 6.9 | Flat | 1,065 23 | 17,594 | 60 | 25 | 1 53 | 6.1 | Flat | 383 45 | 6 | 197 |
| Stayner | 1913 | 158 48 | ..... | 120 | ..... | ..... | ..... | | 116 91 | ..... | 30 | ..... | ..... | ..... | | 301 86 | 2 | 152 |
| | 1914 | 909 58 | 9,200 | 108 | 7 | 66 | 9.9 | | 747 93 | 11,000 | 56 | 20 | 1 45 | 6.7 | | 1,699 08 | 2 | 156 |
| | 1915 | 995 47 | 11,845 | 106 | 9 | 78 | 8.4 | Flat | 933 55 | 13,725 | 56 | 20 | 1 39 | 6.8 | Flat | 1,694 94 | 2 | 164 |
| | 1916 | 1,012 15 | 11,995 | 115 | 9 | 76 | 9.2 | | 997 39 | 12,955 | 65 | 18 | 1 37 | 7.7 | | 1,835 29 | 3 | 183 |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cannington ... | 1915 | 1,599 40 | ..... | 135 | ..... | ..... | ..... | | 1,120 04 | ..... | 65 | ..... | ..... | ..... | | 464 26 | 6 | 206 |
| | 1916 | 1,720 25 | 25,049 | 150 | 15 | 1 00 | 6.9 | 12.5 | 973 63 | 13,808 | 73 | 17 | 1 17 | 7.1 | 12.5 | 462 47 | 7 | 230 |
| Dutton ..... | 1915 | 318 85 | 3,970 | 108 | ..... | ..... | 8.0 | | 206 59 | 2,818 | 43 | ..... | ..... | 7.3 | | ..... | 1 | 152 |
| | 1916 | 1,353 04 | 17,243 | 112 | 13 | 1 03 | 7.8 | Flat | 960 27 | 13,256 | 52 | 23 | 1 34 | 7.2 | Flat | 135 31 | 1 | 165 |
| Pt. Stanley ... | 1912 | 897 02 | ..... | 122 | ..... | ..... | ..... | | 1,106 63 | ..... | 40 | ..... | ..... | ..... | | 1,314 70 | 3 | 165 |
| | 1913 | 1,828 06 | ..... | 182 | ..... | ..... | ..... | Flat | 1,771 70 | ..... | 60 | ..... | ..... | ..... | Flat | 2,418 00 | 9 | 251 |
| | 1914 | 2,066 41 | ..... | 229 | ..... | ..... | ..... | | 1,753 60 | ..... | 72 | ..... | ..... | ..... | | 2,170 83 | 12 | 313 |
| | 1915 | 2,498 57 | ..... | 274 | ..... | ..... | ..... | | 1,736 42 | ..... | 73 | ..... | ..... | ..... | | 2,064 76 | 9 | 356 |
| | 1916 | 2,956 97 | ..... | 308 | ..... | ..... | ..... | | 1,551 37 | ..... | 72 | ..... | ..... | ..... | | 1,985 92 | 11 | 391 |
| Chesterville.. | 1914 | 530 13 | 7,672 | 68 | ..... | ..... | 6.9 | None | 791 67 | 10,176 | 35 | ..... | ..... | 7.7 | None | ..... | ..... | 103 |
| | 1915 | 919 27 | 12,663 | 85 | 14 | 1 00 | 7.2 | | 1,187 54 | 12,104 | 49 | 21 | 2 06 | 9.8 | | ..... | ..... | 134 |
| | 1916 | 1,490 99 | 15,779 | 89 | 17 | 1 43 | 9.4 | | 1,240 56 | 15,179 | 47 | 26 | 2 12 | 8.2 | | 177 55 | 1 | 137 |
| Ayr ..... | 1915 | 892 63 | 16,031 | 79 | ..... | ..... | 5.5 | | 773 08 | 9,477 | 35 | ..... | ..... | 8.1 | | 348 78 | 1 | 115 |
| | 1916 | 1,084 46 | 12,314 | 83 | 13 | 1 12 | 8.8 | 12.5+25 | 804 00 | 12,960 | 48 | 26 | 1 61 | 6.2 | 12.5+25 | 393 39 | 2 | 133 |
| Waterdown ... | 1912 | 774 40 | ..... | 41 | ..... | ..... | ..... | | 340 00 | ..... | 20 | ..... | ..... | ..... | ..... | 614 42 | 2 | 63 |
| | 1913 | 1,003 09 | ..... | 70 | ..... | ..... | ..... | | 361 20 | ..... | 34 | ..... | ..... | ..... | ..... | 917 65 | 2 | 106 |
| | 1914 | 1,054 13 | 13,360 | 71 | 16 | 1 25 | 7.9 | None | 535 83 | 8,321 | 34 | 20 | 1 31 | 6.5 | None | 1,011 38 | 5 | 110 |
| | 1915 | 1,202 41 | 18,017 | 84 | 19 | 1 30 | 6.7 | | 567 65 | 8,493 | 30 | 23 | 1 48 | 6.7 | | 1,207 80 | 7 | 121 |
| | 1916 | 1,218 86 | 18,622 | 93 | 18 | 1 15 | 6.5 | | 575 10 | 8,944 | 32 | 24 | 1 55 | 6.4 | | 1,149 78 | 6 | 131 |
| Thamesville .. | 1915 | 378 79 | ..... | 107 | ..... | ..... | ..... | 9 | 283 36 | ..... | 53 | ..... | ..... | ..... | 11 | ..... | ..... | 160 |
| | 1916 | 1,729 79 | 19,061 | 137 | 13 | 1 18 | 9.1 | | 1,021 17 | 13,087 | 59 | 20 | 1 52 | 7.8 | | ..... | ..... | 196 |
| Bolton ..... | 1915 | 624 86 | 6,563 | 59 | ..... | ..... | 9.5 | | 553 80 | 7,298 | 42 | ..... | ..... | 7.6 | | 313 74 | 3 | 104 |
| | 1916 | 926 86 | 9,322 | 70 | 12 | 1 20 | 9.9 | 10 + 25 | 882 26 | 13,081 | 36 | 28 | 1 88 | 6.7 | 10 + 25 | 3,947 32 | 4 | 110 |
| Ailsa Craig ... | 1916 | 579 57 | 6,270 | 51 | ..... | ..... | 9.2 | None | 213 46 | 1,910 | 11 | ..... | ..... | 11.2 | None | 15 57 | 1 | 63 |
| Flesherton.... | 1916 | 568 76 | ..... | 73 | ..... | ..... | ..... | None | 423 83 | ..... | 30 | ..... | ..... | ..... | None | ..... | ..... | 103 |
| Dundalk..... | 1916 | 924 30 | ..... | 88 | ..... | ..... | ..... | Flat | 960 58 | ..... | 63 | ..... | ..... | ..... | Flat | 618 52 | 2 | 153 |
| Bothwell ..... | 1915 | 230 61 | ..... | 68 | ..... | ..... | ..... | Flat | 191 21 | ..... | 32 | ..... | ..... | ..... | | ..... | ..... | 100 |
| | 1916 | 928 16 | 8,662 | 78 | 10 | 1 03 | 10.7 | | 768 57 | 8,613 | 52 | 17 | 1 46 | 8.9 | Flat | ..... | ..... | 130 |
| Lucan ..... | 1915 | 824 07 | ..... | 87 | ..... | ..... | ..... | | 687 37 | ..... | 39 | ..... | ..... | ..... | | 18 66 | 3 | 129 |
| | 1916 | 1,124 73 | 12,047 | 98 | 11 | 1 00 | 9.3 | | 857 11 | 8,370 | 42 | 17 | 1 78 | 10.2 | | 159 67 | 7 | 147 |
| Woodbridge .. | 1915 | 367 49 | 4,878 | 42 | ..... | ..... | 7.5 | None | 443 53 | 4,911 | 33 | ..... | ..... | 9.0 | None | 498 44 | 2 | 77 |
| | 1916 | 507 10 | 7,059 | 58 | 13 | 89 | 7.0 | | 556 82 | 7,048 | 33 | 17 | 1 40 | 7.9 | | 2,221 33 | 7 | 98 |
| Creemore .... | 1915 | 699 81 | 6,399 | 78 | ..... | ..... | 10.9 | Flat | 937 84 | 7,653 | 59 | ..... | ..... | 12.2 | Flat | 939 20 | 1 | 138 |
| | 1916 | 922 41 | 9,678 | 78 | 14 | 1 00 | 7.2 | | 1,041 90 | 8,745 | 44 | 15 | 1 72 | 11.9 | | 1,151 96 | 2 | 132 |
| Coldwater .... | 1913 | 405 43 | ..... | 48 | ..... | ..... | ..... | None | 330 25 | ..... | 32 | ..... | ..... | ..... | None | 247 19 | 1 | 81 |
| | 1914 | 853 56 | 12,466 | 62 | 19 | 1 30 | 6.8 | | 589 85 | 10,382 | 39 | 24 | 1 40 | 5.7 | | 617 26 | 2 | 103 |
| | 1915 | 874 94 | 16,706 | 66 | 21 | 1 15 | 5.3 | | 703 35 | 13,686 | 37 | 31 | 1 54 | 5.1 | | 363 88 | 2 | 105 |
| | 1916 | 977 62 | 16,599 | 70 | 20 | 1 20 | 5.9 | | 848 82 | 16,644 | 39 | 36 | 1 85 | 5.1 | | 247 91 | 2 | 111 |
| Embro ..... | 1915 | 400 50 | ..... | 65 | ..... | ..... | ..... | None | 489 67 | ..... | 30 | ..... | ..... | ..... | None | ..... | ..... | 95 |
| | 1916 | 633 95 | 5,690 | 58 | 7 | 85 | 11.1 | | 598 41 | 10,333 | 29 | 29 | 1 66 | 5.8 | | 155 54 | 2 | 89 |

## STATEMENT "D"—Continued

Showing Comparative Revenue, Number of Customers, Total Kw-hr. Consumption, Average Monthly Consumption per Customer, Average Monthly Bill, and Net Cost per Kw-hr. for the Years 1912, 1913, 1914, 1915, 1916

| Municipality | Year | Domestic Light | | | | | | | Commercial Light | | | | | | | Power | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per Kw-hr. | Net Cost prior to Hydro | Revenue | Consumption | Number of Consumers | Av'g Monthly Consumption | Average Monthly Bill | Net Cost per Kw-hr. | Net Cost prior to Hydro | Revenue | Number of Consumers | Total Number Consumers |
| | | $ c. | Kw-hrs. | | Kw-hr | $ c. | Cents | Cents | $ c. | Kw-hrs. | | Kw-hr | $ c. | Cents | Cents | $ c. | | |
| Woodville | 1915 | 324 34 | ..... | 35 | ..... | ..... | ..... | 12.5 | 563 68 | ..... | 28 | ..... | ..... | ..... | 12.5 | 1,149 17 | 3 | 66 |
| | 1916 | 496 52 | 5,049 | 41 | 9 | 92 | 9.8 | | 512 07 | 6,618 | 24 | 21 | 1 62 | 7.7 | | 1,185 54 | 3 | 68 |
| Baden | 1913 | 884 11 | ..... | 75 | ..... | ..... | ..... | None | * | ..... | * | ..... | ..... | ..... | None | 2,242 77 | 4 | 79 |
| | 1914 | 1,247 81 | 6,920 | 82 | 7 | 75 | 10.0 | | * | 5,547 | * | 7 | 75 | 10.0 | | 4,580 23 | 4 | 86 |
| | 1915 | 938 33 | 12,729 | 72 | 13 | 98 | 7.4 | | * | ..... | * | 13 | 98 | 7.4 | | 4,588 87 | 4 | 76 |
| | 1916 | 808 21 | 8,824 | 84 | 16 | 86 | 5.5 | | * | 5,772 | * | 16 | 86 | 5.5 | | 5,059 33 | 5 | 89 |
| Brechin | 1915 | 148 83 | ..... | 13 | ..... | ..... | ..... | None | 407 78 | ..... | 14 | ..... | ..... | ..... | None | 1,007 59 | 1 | 28 |
| | 1916 | 172 42 | 1,836 | 16 | 11 | 1 02 | 9.4 | | 404 70 | 5,370 | 20 | 28 | 2 00 | 7.5 | | 1,153 32 | 1 | 37 |
| Beachville | 1913 | 562 97 | ..... | 45 | ..... | ..... | ..... | None | * | ..... | * | ..... | ..... | ..... | None | 5,993 81 | 4 | 49 |
| | 1914 | 587 33 | 4,422 | 45 | ..... | ..... | 7.9 | | * | 2,988 | * | ..... | ..... | 7.9 | | 5,368 04 | 4 | 49 |
| | 1915 | 363 33 | 5,356 | 37 | 11 | 74 | 6.8 | | 296 37 | 4,847 | 12 | 34 | 2 05 | 6.1 | | 5,593 15 | 4 | 53 |
| | 1916 | 400 81 | 5,891 | 42 | 13 | 84 | 6.8 | | 263 62 | 3,872 | 12 | 27 | 1 83 | 6.8 | | 5,393 02 | 3 | 57 |
| Burford | 1916 | 577 69 | 9,005 | 64 | ..... | ..... | 6.4 | Flat | 380 44 | 7,569 | 30 | ..... | ..... | 5.0 | Flat | 519 72 | 11 | 95 |
| Comber | 1915 | 214 87 | 3,181 | 33 | ..... | ..... | 6.8 | None | 274 49 | 3,497 | 33 | ..... | ..... | 7.8 | None | ..... | ..... | 66 |
| | 1916 | 538 57 | 5,894 | 37 | 14 | 1 32 | 9.1 | | 678 58 | 6,729 | 37 | 15 | 1 50 | 10.1 | | ..... | ..... | 74 |
| Drumbo | 1915 | 304 49 | ..... | 40 | ..... | ..... | ..... | None | 288 99 | ..... | 30 | ..... | ..... | ..... | None | 159 85 | 1 | 71 |
| | 1916 | 340 75 | 4,481 | 35 | 10 | 77 | 7.5 | | 277 43 | 3,718 | 22 | 15 | 1 12 | 7.6 | | 116 57 | ..... | 57 |
| Delaware | 1915 | 146 16 | ..... | 22 | ..... | ..... | ..... | None | 114 18 | ..... | 10 | ..... | ..... | ..... | None | ..... | 1 | 33 |
| | 1916 | 354 60 | 2,835 | 23 | 11 | 1 35 | 12.5 | | 141 64 | 1,823 | 12 | 14 | 1 07 | 7.8 | | ..... | ..... | 35 |
| Dorchester | 1915 | 579 23 | 6,840 | 61 | ..... | ..... | 8.5 | None | 309 88 | 4,806 | 18 | ..... | ..... | 6.4 | None | 287 95 | 2 | 81 |
| | 1916 | 613 03 | 7,329 | 61 | 10 | 1 84 | 8.4 | | 275 82 | 4,879 | 16 | 19 | 1 35 | 5.7 | | 667 93 | 2 | 79 |
| Lynden | 1916 | 254 76 | 3,500 | 24 | ..... | ..... | 7.3 | None | 227 57 | 4,430 | 10 | ..... | ..... | 5.1 | None | 650 38 | 1 | 35 |
| Elmvale | 1913 | 284 34 | ..... | 52 | ..... | ..... | ..... | None | 358 60 | ..... | 52 | ..... | ..... | ..... | None | ..... | 1 | 105 |
| | 1914 | 673 18 | 6,856 | 57 | 10 | 1 03 | 9.9 | | 896 11 | 15,402 | 48 | 25 | 1 49 | 5.8 | | 438 38 | 2 | 107 |
| | 1915 | 704 12 | 7,728 | 78 | 10 | 87 | 9.1 | | 778 93 | 16,193 | 64 | 25 | 1 16 | 3.9 | | 1,186 44 | 2 | 144 |
| | 1916 | 816 74 | 10,562 | 81 | 11 | 85 | 7.7 | | 736 74 | 18,644 | 62 | 25 | 97 | 5.0 | | 1,043 96 | 3 | 146 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lambeth | 1915 | 344 47 | 2,991 | 49 | ..... | ..... | 11.5 | None | 119 00 | 1,042 | 9 | ..... | ..... | 11.4 | None | 559 82 | 1 | 59 |
| | 1916 | 575 65 | 6,880 | 54 | 11 | 91 | 8.4 | | 208 96 | ..... | 13 | ..... | 1 58 | 8.3 | | 249 36 | 1 | 68 |
| Mt. Brydges | 1915 | 333 43 | ..... | 45 | ..... | ..... | ..... | None | 494 02 | ..... | 15 | ..... | ..... | ..... | None | 517 50 | 1 | 61 |
| | 1916 | 644 75 | 5,058 | 55 | 8 | 1 07 | 12.7 | | 170 46 | 3,106 | 15 | 17 | 95 | 5.5 | | 760 58 | 2 | 72 |
| Plattsville | 1915 | 551 39 | 6,061 | 56 | ..... | ..... | 9.1 | None | 477 71 | 5,091 | 20 | ..... | ..... | 9.4 | None | 1,128 27 | 4 | 80 |
| | 1916 | 666 30 | 7,422 | 60 | 11 | 96 | 9.0 | | 580 62 | 5,900 | 22 | 14 | 1 35 | 9.8 | | 1,436 62 | 3 | 85 |
| Princeton | 1915 | 440 42 | ..... | 30 | ..... | ..... | ..... | None | 81 57 | ..... | 15 | ..... | ..... | ..... | None | ..... | ..... | 45 |
| | 1916 | 657 80 | 7,739 | 44 | 17 | 1 48 | 8.5 | | 127 81 | 1,278 | 11 | 8 | 83 | 10.6 | | 192 92 | ..... | 55 |
| Pt. McNicoll | 1915 | 415 03 | 6,037 | 60 | ..... | ..... | 6.8 | None | 311 20 | 6,542 | 26 | ..... | ..... | 4.7 | None | ..... | ..... | 86 |
| | 1916 | 618 82 | 9,450 | 66 | 12 | 82 | 6.5 | | 301 92 | 4,738 | 21 | 17 | 1 07 | 6.4 | | 7 37 | 1 | 88 |
| Rockwood | 1913 | 230 27 | ..... | 48 | ..... | ..... | ..... | None | * | ..... | 9 | ..... | ..... | ..... | None | 480 82 | 1 | 58 |
| | 1914 | 848 55 | 7,824 | 54 | 13 | 1 38 | 8.8 | | * | ..... | 7 | ..... | ..... | 8.8 | | 1,542 01 | 3 | 64 |
| | 1915 | 731 97 | 9,500 | 65 | 13 | 1 03 | 7.7 | | 251 27 | 3,300 | 10 | 32 | 2 46 | 7.7 | | 907 57 | 3 | 78 |
| | 1916 | 733 66 | 11,263 | 72 | 14 | 89 | 6.5 | | 388 05 | 5,930 | 11 | 47 | 3 08 | 6.4 | | 903 57 | 5 | 87 |
| Sunderland | 1915 | 794 83 | ..... | 57 | ..... | ..... | ..... | | 939 85 | ..... | 36 | ..... | ..... | ..... | | ..... | ..... | 93 |
| | 1916 | 752 64 | 7,714 | 61 | 11 | 1 06 | 9.8 | 12.5 | 840 22 | 9,644 | 37 | 45 | 1 92 | 9.0 | 12.5 | 211 86 | 1 | 99 |
| St. George | 1915 | 203 23 | ..... | 39 | ..... | ..... | ..... | None | 139 16 | ..... | 14 | ..... | ..... | ..... | None | 311 30 | 1 | 54 |
| | 1916 | 832 23 | 11,483 | 56 | 20 | 1 46 | 7.2 | | 474 38 | 7,031 | 24 | 31 | 2 08 | 6.7 | | 583 52 | 2 | 82 |
| Thorndale | 1914 | 446 27 | 2,787 | 34 | ..... | ..... | 7.8 | None | ..... | 2,989 | 18 | ..... | ..... | 7.8 | None | 329 27 | 1 | 53 |
| | 1915 | 299 37 | 2,816 | 32 | 7 | 76 | 10.6 | | 374 09 | 3,653 | 20 | 16 | 1 64 | 10.2 | | 542 53 | 1 | 53 |
| | 1916 | 328 67 | 3,597 | 33 | 9 | 84 | 9.1 | | 403 01 | 3,709 | 21 | 16 | 1 64 | 10.9 | | 459 79 | 1 | 55 |
| Thamesford | 1914 | 393 49 | 3,686 | 44 | ..... | ..... | 10.9 | None | 323 92 | 3,445 | 26 | ..... | ..... | 9.4 | None | 946 32 | 2 | 72 |
| | 1915 | 574 34 | 6,676 | 59 | 9 | 78 | 8.6 | | 481 78 | 5,886 | 26 | 12 | 1 20 | 8.2 | | 423 21 | 2 | 87 |
| | 1916 | 642 21 | 7,540 | 64 | 10 | 87 | 8.5 | | 537 42 | 6,768 | 29 | 20 | 1 63 | 7.9 | | 268 23 | 2 | 95 |
| Williamsburg | 1915 | 403 72 | ..... | 44 | ..... | ..... | ..... | None | 139 26 | ..... | 9 | ..... | ..... | ..... | None | ..... | 1 | 54 |
| | 1916 | 568 66 | 7,392 | 41 | 14 | 1 11 | 7.7 | | 224 29 | 3,934 | 9 | 36 | 2 08 | 5.7 | | 285 73 | 1 | 51 |
| Waubausheue | 1915 | 516 34 | 7,296 | 49 | ..... | ..... | 7.0 | None | 220 50 | 2,979 | 15 | ..... | ..... | 7.7 | None | 32 28 | 1 | 65 |
| | 1916 | 646 58 | 8,233 | 58 | 13 | 1 01 | 7.9 | | 496 47 | 7,534 | 20 | 36 | 2 37 | 6.6 | | 49 52 | 1 | 79 |

## STATEMENT "E"

**Street Light Installation in Hydro Municipalities, December 31st, 1916, showing Cost per Year, Cost per Lamp, and Cost per Capita.**

| Municipality | Population | Number of Lamps | Size and Style of Lamps | | Cost per Lamp | Total Cost | Cost per Capita |
|---|---|---|---|---|---|---|---|
| | | | | | $ c. | $ c. | $ c. |
| Toronto | 463,705 | 24 | 500 w. Nitro | m | 45 00 | 361,920 32 | 78 |
| | | 452 | 5 lt. Stds. | m | 40 00 | | |
| | | 41,739 | 100 watt | m | 8 00 | | |
| Hamilton | 100,461 | 401 | 500-Watt | m | 40 00 | 80,815 73 | 80 |
| | | 501 | 250 " | m | 12 00 | | |
| | | 294 | 200 " | m | 12 00 | | |
| | | 7,270 | 100 " | m | 7 20 | | |
| | | 10 | 150 " | m | special | | |
| | | 6 | 60 " | m | | | |
| | | 12 | 40 " | m | | | |
| Ottawa | 100,163 | 59 | arcs | s | 45 00 | 60,632 48 | 61 |
| | | 671 | 400-watt | s | 45 00 | | |
| | | 44 | 250 " | s | 35 00 | | |
| | | 429 | 75 " | s | 10 00 | | |
| | | 2,870 | 100 " | m | 60c. per ft. | | |
| | | 313 | 100 " | m | 6 00 | | |
| London | 58,055 | 2,461 | 75 " | s | Special | 31,719 17 | 55 |
| | | 193 | 200 " | m | | | |
| | | 22 | 300 " | s | | | |
| | | 18 | 400 " | s | | | |
| | | 96 | 500 " | m | | | |
| | | 146 | 100 " | m | | | |
| Brantford | 25,420 | 147 | mag. arcs | s | 40 00 | 27,500 83 | 1 08 |
| | | 2,850 | 100-watt | s | 7 50 | | |
| | | 7 | 150 " | s | 9 00 | | |
| Windsor | 24,162 | 280 | 500 " | s | 50 00 | 37,266 17 | 1 54 |
| | | 1,948 | 75 " | s | 12 00 | | |
| Peterboro' | 20,426 | 145 | arcs | s | 50 00 | 13,257 49 | 65 |
| | | 56 | magnetites | s | 50 50 | | |
| | | 350 | 60-watt | s | 9 00 | | |
| Kitchener | 19,266 | 10 | 500 " | m | 33 00 | 18,621 19 | 97 |
| | | 26 | 400 " | m | 29 00 | | |
| | | 1,973 | 100 " | s | 9 00 | | |
| St. Catharines | 17,880 | 1,970 | 100 " | s | 8 00 | 15,261 33 | 85 |
| St. Thomas | 17,174 | 113 | 500 " | s | 37 50 | 14,690 24 | 85 |
| | | 20 | arcs | s | 55 00 | | |
| | | 987 | 75 " | s | 9 50 | | |
| Stratford | 17,081 | 11 | 500 " | s | 50 00 | 15,753 20 | 92 |
| | | 164 | 500 " | s | 45 00 | | |
| | | 5 | 500 " | s | 40 00 | | |
| | | 767 | 75 " | s | 10 00 | | |
| Guelph | 16,735 | 1,103 | 100 " | m | 8 50 | 9,518 72 | 57 |
| Port Arthur | 14,307 | 1,661 | 100 " | m | 7 49 | 15,207 40 | 1 06 |
| | | 15 | 100 " | m | 5 62 | | |
| | | 724 | 60 " | m | 4 78 | | |
| Chatham | 12,863 | 69 | 500-watt | s | 36 75 | 13,169 02 | 1 02 |
| | | 83 | 400 " | s | 30 00 | | |
| | | 31 | 100 " | s | 11 00 | | |
| | | 646 | 100 " | s | 12 00 | | |
| Owen Sound | 11,910 | 53 | 400 C. P. | s | 50 00 | 7,000 00 | 59 |
| | | 114 | 75-watt | s | 11 00 | | |
| | | 249 | 60 " | m | 11 00 | | |
| Galt | 11,852 | 78 | 500 " | m | ..... | 12,567 40 | 1 06 |
| | | 97 | 300 " | m | ..... | | |
| | | 279 | 100 " | m | ..... | | |
| | | 853 | 75 " | s | ..... | | |
| Sarnia | 11,676 | ..... | ..... | | ..... | 3,480 00 | * |

## STATEMENT "E"—Continued

**Street Light Installation in Hydro Municipalities, December 31st, 1916, showing Cost per Year, Cost per Lamp, and Cost per Capita.**

| Municipality | Population | Number of Lamps | Size and Style of Lamps | Cost per Lamp | Total Cost | Cost per Capita |
|---|---|---|---|---|---|---|
| | | | | $ c. | $ c. | $ c. |
| Niagara Falls | 11,147 | 30 | arc C. s | 50 00 | 12,849 81 | 1 15 |
| | | 16 | arc T. s | 50 00 | | |
| | | 101 | ornam. s | 50 00 | | |
| | | 57 | 32 C.P. m | 6 00 | | |
| | | 413 | 100-watt s | 12 00 | | |
| Woodstock | 10,084 | 50 | 250 " s | 24 00 | 7,355 01 | 73 |
| | | 678 | 100 " s | 9 00 | | |
| Brockville | 9,428 | 52 | 5 lt. Stds. m | ..... | 9,000 00 | 95 |
| | | 34 | 3 lt. Stds. m | | | |
| | | 503 | 80 C.P. m | | | |
| Welland | 7,243 | 345 | 100-watt m | 9 00 | 5,181 00 | 72 |
| | | 96 | 200 " m | 18 00 | | |
| Barrie | 6,453 | 433 | 100 " s | 12 00 | 5,323 67 | 82 |
| Collingwood | 6,361 | 394 | 100 " m | 10 00 | 3,940 00 | 62 |
| Midland | 6,258 | 16 | 750 " s | 40 00 | 3,330 46 | 53 |
| | | 276 | 100 " s | 10 00 | | |
| Ingersoll | 5,176 | 26 | 650 " s | ..... | 3,729 00 | 72 |
| | | 220 | 75 " s | 11 50 | | |
| | | 67 | 60 " s | 11 00 | | |
| Walkerville | 5,096 | 691 | 60 " m | 5 60 | 9,039 04 | ‡1 77 |
| | | 94 | 100 " m | 12 00 | | |
| | | 17 | 60 " m | 12 00 | | |
| Waterloo | 4,956 | 44 | 5 lt. Stds. m | 40 00 | 5,798 75 | 1 17 |
| | | 8 | 3 " m | 25 00 | | |
| | | 38 | 60-watt m | 8 75 | | |
| | | 14 | 100 " m | 10 50 | | |
| | | 382 | 100 " s | 8 75 | | |
| Goderich | 4,655 | 275 | 75-watt s | 14 00 | 5,162 39 | 1 11 |
| | | 16 | 5 lt. Stds. m | 50 00 | | |
| | | 8 | 1 " m | 40 00 | | |
| | | 8 | 1 " m | 25 00 | | |
| | | 301 | 100-watt m | 9 00 | | |
| Dundas | 4,652 | 30 | W. Hamilton m | 14 00 | 3,547 73 | † 58 |
| | | 24 | Ancaster m | 12 00 | | |
| | | 5 | Greensville m | 12 00 | | |
| Preston | 4,643 | 222 | 75-watt s | 11 00 | 3,044 92 | 65 |
| | | 47 | 100 " s | 12 00 | | |
| Paris | 4,370 | 400 | 100 " s | 11 00 | 4,576 00 | 1 05 |
| Wallaceburg | 4,107 | 170 | 75 " s | 13 50 | 3,094 56 | 75 |
| | | 28 | 400 " s | 30 00 | | |
| Simcoe | 4,061 | 27 | 300 " s | 38 00 | 3,500 00 | 86 |
| | | 228 | 75 " s | 14 00 | | |
| Brampton | 4,041 | 570 | 100 " m | 7 50 | 4,262 17 | 1 05 |
| St. Mary's | 3,958 | 113 | 250 " s | 25 00 | 5,390 33 | 1 36 |
| | | 198 | 100 " s | 13 00 | | |
| Penetang | 3,928 | 170 | 100 " s | 12 00 | 2,095 00 | 55 |
| | | 2 | ..... s | 27 50 | | |
| Petrolia | 3,891 | 136 | 100-watt s | 15 50 | ..... | * |
| | | 24 | 600 " s | 55 00 | | |
| Tillsonburg | 3,084 | 216 | 75 " s | 11 00 | 2,595 96 | 84 |
| Strathroy | 2,998 | 32 | 200 " s | 23 00 | 4,654 59 | 1 55 |
| | | 283 | 75 " s | 14 00 | | |
| Hespeler | 2,740 | 18 | 200 " s | 18 00 | 1,831 80 | 67 |
| | | 128 | 100 " s | 13 00 | | |

## STATEMENT "E"—Continued

**Street Light Installation in Hydro Municipalities, December 31st, 1916, showing Cost per Year, Cost per Lamp, and Cost per Capita.**

| Municipality | Population | Number of Lamps | Size and Style of Lamps | Cost per Lamp | Total Cost | Cost per Capita |
|---|---|---|---|---|---|---|
| | | | | $ c. | $ c. | $ c. |
| Prescott | 2,740 | 400 | 100-watt m | | 2,500 00 | 90 |
| Orangeville | 2,493 | 32 | 250 C.P. s | 15 00 | | * |
| | | 116 | 150 " s | 12 00 | | |
| Listowel | 2,326 | 12 | 350-watt m | | | * |
| | | 230 | 60 " m | | | |
| Ridgetown | 2,326 | 17 | 200 " s | 37 00 | 2,969 00 | 1 27 |
| | | 130 | 100 " s | 18 00 | | |
| Elmira | 2,270 | 145 | 100 " m | 12 00 | 1,740 00 | 77 |
| Clinton | 2,177 | 133 | 75 " s | 12 50 | 1,650 00 | 76 |
| Weston | 2,156 | 211 | 75 " s | 12 00 | 3,692 00 | †1 30 |
| | | 8 | 5 lt. Stds. m | 40 00 | | |
| | | 26 | York Tp. s | 16 00 | | |
| | | 26 | Etobicoke Tp. s | 15 00 | | |
| Milton | 2,072 | 203 | 100-watt m | 11 00 | 2,013 20 | 97 |
| Mimico | 1,976 | 152 | 100 " m | 11 00 | 2,496 75 | † 84 |
| | | 61 | 100 " m | 16 00 | | |
| Chesley | 1,975 | 81 | 100 " s | 13 00 | | * |
| | | 16 | 200 " s | | | |
| Seaforth | 1,964 | 10 | 80 " s | 13 00 | 1,869 96 | 95 |
| | | 70 | 80 " s | 12 00 | | |
| | | 60 | 100 " s | 15 00 | | |
| Mount Forest | 1,941 | 171 | 100 " s | 12 00 | 1,963 00 | 1 01 |
| Georgetown | 1,905 | 150 | 100 " m | 11 00 | 1,724 17 | † 83 |
| | | 11 | Glenwilliam m | 12 00 | | |
| Palmerston | 1,843 | 103 | 100-watt s | 15 00 | 1,542 33 | 84 |
| Fergus | 1,776 | 126 | 100 " m | 12 50 | 1,575 00 | 88 |
| Tilbury | 1,740 | 61 | 100 " m | 15 00 | 938 73 | 54 |
| Acton | 1,735 | 72 | 75 " s | | 1,497 50 | 86 |
| | | 60 | 100 " m | | | |
| Gravenhurst | 1,702 | 162 | 75 " s | | 1,172 49 | * 69 |
| | | 27 | dock lights | | | |
| Mitchell | 1,687 | 156 | 100-watt s | 12 00 | 2,100 00 | 1 24 |
| Durham | 1,600 | 90 | 100 " s | 12 00 | 1,068 00 | 67 |
| Exeter | 1,572 | 23 | 250 " m | 27 00 | | |
| | | 150 | 100 " m | 14 00 | | |
| New Hamburg | 1,543 | 215 | 100 " m | 8 50 | 1,827 00 | 1 18 |
| Dresden | 1,521 | 110 | 100 " s | 15 00 | 1,650 00 | 1 08 |
| Victoria Harbor | 1,477 | 60 | 100 " m | 12 00 | 720 00 | 49 |
| Blenheim | 1,424 | 13 | 300 " s | 36 50 | 2,536 00 | 1 78 |
| | | 133 | 100 " s | 15 50 | | |
| Harriston | 1,404 | 61 | 75 " s | 16 50 | 1,253 25 | * 89 |
| Pt. Dalhousie | 1,318 | 85 | 100 " m | 10 00 | 850 00 | 64 |
| Caledonia | 1,217 | 69 | 100 " m | 12 00 | 760 00 | 62 |
| Norwich | 1,189 | 15 | 400 " m | 42 00 | 1,183 56 | 99 |
| | | 45 | 100 " m | 10 50 | | |
| | | 53 | 60 " m | 9 00 | | |

## STATEMENT "E"—Continued

**Street Light Installation in Hydro Municipalities, December 31st, 1916, showing Cost per Year, Cost per Lamp, and Cost per Capita.**

| Municipalities | Population | Number of Lamps | Size and Style of Lamps | Cost per Lamp | Total Cost | Cost per Capita |
|---|---|---|---|---|---|---|
| | | | | $ c. | $ c. | $ c. |
| New Toronto | 1,186 | 59<br>12 | 100-watt m<br>100 " m | 12 00<br>15 00 | 838 00 | 71 |
| Waterford | 1,133 | 96 | 100 " m | 14 00 | 1,174 82 | 1 03 |
| Shelburne | 1,115 | 86 | 100 " s | 12 00 | ..... | * |
| Elora | 1,115 | 80 | 100 " m | 12 50 | 1,000 00 | 90 |
| Hagersville | 1,105 | 100 | 100 " m | 12 00 | 1,200 00 | 1 08 |
| Winchester | 1,065 | 113 | 100 " m | 15 00 | 1,500 00 | 1 41 |
| Pt. Credit | 1,046 | 94 | 100 " m | 11 00 | 1,033 00 | 99 |
| Beaverton | 1,015 | 71 | 100 " m | 13 00 | 923 04 | 91 |
| Markdale | 989 | 65 | 100 " s | 10 50 | ..... | * |
| Stayner | 972 | 51<br>15 | 60 " s<br>100 " s | 9 00<br>12 00 | 609 00 | 63 |
| Cannington | 903 | 69 | 100 " m | 12 00 | 831 96 | 92 |
| Milverton | 893 | 88 | 100 " m | 12 50 | ..... | * |
| Dutton | 870 | 95 | 100 " m | 15 50 | 1,469 88 | 1 68 |
| Port Stanley | 849 | 111<br>46 | 100 " m<br>100 " m | 13 00<br>6 50 | 1,714 00 | ‖ |
| Chesterville | 854 | 61 | 100 " m | 13 00 | 798 00 | 93 |
| Ayr | 800 | 78 | 100 " m | 14 00 | 1,092 00 | 1 35 |
| Waterdown | 785 | 59 | 100 " m | 10 00 | 590 00 | 75 |
| Thamesville | 769 | 70 | 100 " m | 15 00 | 1,030 00 | 1 34 |
| Bolton | 727 | 60 | 100 " m | 15 00 | 893 75 | 1 23 |
| Dundalk | 721 | 62 | 100 " m | 12 00 | 744 00 | 1 03 |
| Bothwell | 703 | 74 | 100 " m | 15 50 | 1,186 06 | 1 68 |
| Lucan | 662 | 65 | 100 " m | 15 00 | 979 50 | 1 48 |
| Woodbridge | 639 | 74 | 100 " m | 13 00 | 963 00 | 1 51 |
| Ailsa Craig | 586 | 51 | 100 " m | 15 50 | 819 62 | 1 40 |
| Creemore | 585 | 54 | 100 " m | 16 00 | 874 58 | 1 50 |
| Coldwater | 579 | 44 | 100 " m | 12 00 | 528 00 | 91 |
| Wyoming | 544 | 48 | 100 " m | 16 50 | ..... | * |
| Embro | 483 | 49 | 100 " m | 14 00 | 685 10 | 1 42 |
| Flesherton | 428 | 44 | 150 " m | 11 50 | ..... | * |

## STATEMENT "E"—Concluded

**Street Light Installation in Hydro Municipalities, December 31st, 1916, showing Cost per Year, Cost per Lamp, and Cost per Capita.**

| Municipality | Population | Number of Lamps | Size and Style of Lamps | Cost per Lamp | Total Cost | Cost per Capita |
|---|---|---|---|---|---|---|
| | | | | $ c. | $ c. | $ c. |
| Woodville | 388 | 33 | 100-watt m | 13 00 | 423 44 | 1 09 |
| Chatsworth | 374 | 26 | 100 " m | 12 00 | 325 00 | 87 |
| Baden | | 62 | 100 " m | 11 00 | 683 58 | ** |
| Brechin | | 9 | 100 " m | 13 00 | 117 00 | ** |
| Beachville | | 42 | 100 " m | 12 00 | 150 00 | ** |
| Burford | | 44 | 100 " m | 13 00 | 572 00 | ** |
| Comber | | 42 | 100 " m | 16 50 | 779 51 | ** |
| Drumbo | | 30 | 100 " m | 14 00 | 420 00 | ** |
| Delaware | | 21 | 100 " m | 14 00 | 241 50 | ** |
| Dorchester | | 27 | 100 " m | 14 00 | 326 74 | ** |
| Elmvale | | 52 | 100 " m | 12 00 | 624 00 | ** |
| Granton | | 32 | 100 " m | 15 00 | ..... | ** |
| Holstein | | 11 | 150 " m | 15 50 | ..... | ** |
| Lambeth | | 30 | 100 " m | 14 00 | 420 00 | ** |
| Lynden | | 35 | 100 " m | 12 00 | 360 00 | ** |
| Mount Brydges | | 38 | 100 " m | 14 00 | 532 00 | ** |
| Otterville | | 19 | 100 " m | 17 00 | ..... | ** |
| Plattsville | | 32 | 100 " m | 16 50 | 534 00 | ** |
| Princeton | | 20 | 100 " m | 17 00 | 340 00 | ** |
| Port McNicoll | | 28 | 100 " m | 12 00 | 336 00 | ** |
| Rockwood | | 41<br>5 | 100 " m<br>60 " | 11 00 | 506 00 | ** |
| Sunderland | | 21 | 100 " m | 13 00 | 272 16 | ** |
| St. George | | 33 | 100 " m | 15 00 | 495 00 | ** |
| Thorndale | | 21 | 100 " m | 14 00 | 294 46 | ** |
| Thamesford | | 34 | 100 " m | 14 00 | 476 00 | ** |
| Williamsburg | | 17 | 100 " m | 13 00 | 220 67 | ** |
| Waubaushene | | 29 | 100 " m | 12 00 | 348 00 | ** |

NOTE:—

m Multiple system.
s Series system.
* Not a full year.
† Rural revenue not included.
‡ $5,210.54 Local Improvement debenture charges included.
‖ On account of large summer population figures not representative.
** Population not recorded in Government statistics, so no figures used.

# STATEMENT "P"

## Power Rates in Municipalities

| Municipality | Note | Cost of Power to Municipality per H.P. per Year | 1912 Flat Rates | 1912 Differential Rates | 1913 | 1914 | 1915 | 1916 | 1917 |
|---|---|---|---|---|---|---|---|---|---|
| Acton | | $ c. 50.00 | $ c. 36.00 | $ c. 30.00 | $ c. 30.00 | $ c. 30.00 | $ c. 30.00 | $ c. 30.00 | $ c. 30.00 |
| Alliston | | 13.07 | 49.62 | | | | | | |
| Amherstburg | | Served by Hydro | | | | | | | |
| Ayr | | 57.00 | 57.00 | 57.00 | | | | | |
| Barton | | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 |
| Bayfield | D | 33.30 | 70.20 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 |
| Beachville | D | 44.91 | 48.00 | 31.20 | 31.20 | 31.20 | 31.20 | 31.20 | 31.20 |
| Beamsville | D | | 98.17 | 68.00 | 68.00 | 68.00 | 68.00 | 68.00 | 68.00 |
| Blenheim | D | | | 41.29 | 41.29 | 41.29 | 41.29 | 41.29 | 41.29 |
| Bolton | D | | | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 |
| Bothwell | D | | | 47.25 | 59.25 | | | | |
| Brampton | D | 29.09 | 45.00 | 29.09 | 45.00 | 22.50 | | | |
| Brantford | A | | 11.40 | 33.95 | 11.40 | 19.00 | | | |
| Brigden | D | | | 50.00 | 50.00 | 50.00 | | | |
| Bridgeport, see | | Served by Hydro | | | | | | | |
| Burk's Falls and Armour, see | | Sarn | ndale | | | | | | |
| Burford | D | | | 47.50 | 37.50 | | | | |
| Caledonia | D | 29.11 | 29.11 | 31.00 | 24.00 | | | | |
| Campbellford | D | | | 37.00 | 45.00 | | | | |
| Carleton | A | | | 45.00 | 40.00 | | | | |
| Chatsworth | D | | | 40.00 | 30.00 | | | | |
| Chesley | D | | | 40.00 | 30.00 | | | | |
| Chesterville | D | | 47.25 | 45.00 | 45.00 | | | | |
| Clinton | A | | 49.50 | 43.00 | 42.00 | | | | |
| Cobourg, see | D | 22.00 | | 22.00 | 22.00 | | | | |
| Collingwood | D | 50.00 | | 50.00 | 50.00 | | | | |
| Comber | D | | | 50.00 | 50.00 | | | | |
| Creemore | D | | | 54.15 | | | | | |
| Delaware | D | | | 39.00 | 39.00 | | | | |
| Delhi | D | | | 43.00 | 43.00 | | | | |
| Dorchester | D | | | 47.00 | 47.00 | | | | |
| Dundas | D | | | 40.00 | 40.00 | | | | |
| Dunnville | D | 32.00 | 50.00 | 40.00 | 40.00 | First Standard Schedule | 50 a. h.p. | day | III |
| Dutton | D | | | 45.00 | | | | | |
| Dutton | D | | 13.50 | | | | | | |
| Elmira | D | | 120.00 | 90.00 | 58.00 | | | | |
| Elmvale | D | | 100.00 | 75.00 | 58.00 | | | | |
| Elora | D | | | 40.00 | 33.00 | | | | |
| Embro | D | | | 50.00 | 50.00 | | | | |
| Erin | D | | 74.45 | 49.00 | 41.00 | | | | |
| Essex | D | | | 45.60 | 41.66 | | | | |
| Exeter | D | | 41.95 | 41.95 | 33.25 | | | | |
| Fergus | D | | | 45.96 | 27.90 | | | | |
| Flesherton | D | | | | | | | | |
| Forest | D | | 49.00 | 49.00 | 37.50 | First Standard Schedule | 50 a. h.p. | day | III |
| Georgetown | D | | 90.00 | 90.00 | 58.00 | | | | |
| Glen Williams, see | | Served by Georgetown | | | | | | | |
| Glencoe | A | | | 45.00 | 45.00 | | | | |
| Grand Valley | D | | | 50.00 | 50.00 | | | | |
| Grimsby | D | | | 50.00 | 50.00 | Special Schedule | | | |
| Guelph | D | 17.00 | 17.00 | 11.00 | 11.00 | Special Schedule | | | |
| Hagersville | D | | | 50.00 | 50.00 | First Standard Schedule | 50 a. h.p. | day | III |
| Hamilton | D | | | | | | | | |
| Harriston | D | | | 50.00 | 50.00 | | | | |
| Hespeler | D | | | 50.00 | 50.00 | | | | |
| Huntsville | D | | | 50.00 | 50.00 | | | | |
| Ingersoll | D | | | 50.00 | 50.00 | | | | |
| Jarvis | D | | | 50.00 | 50.00 | | | | |
| Kemptville | D | | | 50.00 | 50.00 | | | | |
| Kincardine | D | | | 50.00 | 50.00 | | | | |
| Kingsville | D | | | 50.00 | 50.00 | | | | |
| Lakefield | D | | | 50.00 | 50.00 | | | | |
| Lambeth | D | | | 50.00 | 50.00 | | | | |
| Lanark | D | | | 50.00 | 50.00 | | | | |
| Leamington | D | | | 50.00 | 50.00 | | | | |
| Lindsay | D | | | 50.00 | 50.00 | | | | |
| Listowel | D | | | 50.00 | 50.00 | | | | |
| Lucan | D | | | 50.00 | 50.00 | | | | |
| Lynden | D | | | 50.00 | 50.00 | | | | |
| Madoc | D | | | 50.00 | 50.00 | | | | |
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| Metcalfe | D | | | 50.00 | 50.00 | | | | |
| Midland | D | | | 50.00 | 50.00 | | | | |
| Milton | D | | | 50.00 | 50.00 | | | | |
| Mimico | D | | | 50.00 | 50.00 | | | | |
| Mitchell | D | | | 50.00 | 50.00 | | | | |
| Morrisburg | D | | | 50.00 | 50.00 | | | | |
| Napanee | D | | | 50.00 | 50.00 | | | | |
| Newburgh | D | | | 50.00 | 50.00 | | | | |
| Newcastle | D | | | 50.00 | 50.00 | | | | |
| Newmarket | D | | | 50.00 | 50.00 | | | | |
| Niagara Falls | D | | | 50.00 | 50.00 | | | | |
| Norwich | D | | | 50.00 | 50.00 | | | | |
| Oakville | D | | | 50.00 | 50.00 | | | | |
| Orangeville | D | | | 50.00 | 50.00 | | | | |
| Orillia | D | | | 50.00 | 50.00 | | | | |
| Oshawa | D | | | 50.00 | 50.00 | | | | |
| Otterville | D | | | 50.00 | 50.00 | | | | |
| Owen Sound | D | | | 50.00 | 50.00 | | | | |
| Paisley | D | | | 50.00 | 50.00 | | | | |
| Palmerston | D | | | 50.00 | 50.00 | | | | |
| Paris | D | | | 50.00 | 50.00 | | | | |
| Parkhill | D | | | 50.00 | 50.00 | | | | |
| Parry Sound | D | | | 50.00 | 50.00 | | | | |
| Pembroke | D | | | 50.00 | 50.00 | | | | |
| Penetanguishene | D | | | 50.00 | 50.00 | | | | |
| Perth | D | | | 50.00 | 50.00 | | | | |
| Petrolia | D | | | 50.00 | 50.00 | | | | |
| Picton | D | | | 50.00 | 50.00 | | | | |
| Port Arthur | D | | | 50.00 | 50.00 | | | | |
| Port Colborne | D | | | 50.00 | 50.00 | | | | |
| Port Dover | D | | | 50.00 | 50.00 | | | | |
| Port Hope | D | | | 50.00 | 50.00 | | | | |
| Prescott | D | | | 50.00 | 50.00 | | | | |
| Preston | D | | | 50.00 | 50.00 | | | | |
| Rainham | D | | | 50.00 | 50.00 | | | | |
| Renfrew | D | | | 50.00 | 50.00 | | | | |
| Richmond Hill | D | | | 50.00 | 50.00 | | | | |
| Ridgetown | D | | | 50.00 | 50.00 | | | | |
| Ripley | D | | | 50.00 | 50.00 | | | | |
| Rockwood | D | | | 50.00 | 50.00 | | | | |
| Sarnia | D | | | 50.00 | 50.00 | | | | |
| Scarboro | D | | | 50.00 | 50.00 | | | | |
| Seaforth | D | | | 50.00 | 50.00 | | | | |
| Shelburne | D | | | 50.00 | 50.00 | | | | |
| Simcoe | D | | | 50.00 | 50.00 | | | | |
| Smithville | D | | | 50.00 | 50.00 | | | | |
| Southampton | D | | | 50.00 | 50.00 | | | | |
| Stayner | D | | | 50.00 | 50.00 | | | | |
| Stirling | D | | | 50.00 | 50.00 | | | | |
| Stouffville | D | | | 50.00 | 50.00 | | | | |
| Strathroy | D | | | 50.00 | 50.00 | | | | |
| Streetsville | D | | | 50.00 | 50.00 | | | | |
| Sturgeon Falls | D | | | 50.00 | 50.00 | | | | |
| Sutton | D | | | 50.00 | 50.00 | | | | |
| Tavistock | D | | | 50.00 | 50.00 | | | | |
| Thamesford | D | | | 50.00 | 50.00 | | | | |
| Thamesville | D | | | 50.00 | 50.00 | | | | |
| Thedford | D | | | 50.00 | 50.00 | | | | |
| Tilbury | D | | | 50.00 | 50.00 | | | | |
| Tillsonburg | D | | | 50.00 | 50.00 | | | | |
| Toronto Junction | D | | | 50.00 | 50.00 | | | | |
| Trenton | D | | | 50.00 | 50.00 | | | | |
| Trout Creek | D | | | 50.00 | 50.00 | | | | |
| Uxbridge | D | | | 50.00 | 50.00 | | | | |
| Vankleek Hill | D | | | 50.00 | 50.00 | | | | |
| Victoria Harbour | D | | | 50.00 | 50.00 | | | | |
| Walkerton | D | | | 50.00 | 50.00 | | | | |
| Wallaceburg | D | | | 50.00 | 50.00 | | | | |
| Waterdown | D | | | 50.00 | 50.00 | | | | |
| Watford | D | | | 50.00 | 50.00 | | | | |
| Waubaushene | D | | | 50.00 | 50.00 | | | | |
| Welland | D | | | 50.00 | 50.00 | | | | |
| Wellington | D | | | 50.00 | 50.00 | | | | |
| Wiarton | D | | | 50.00 | 50.00 | | | | |
| Williamsburg | D | | | 50.00 | 50.00 | | | | |
| Windsor | D | | | 50.00 | 50.00 | | | | |
| Wingham | D | | | 50.00 | 50.00 | | | | |
| Woodbridge | D | | | 50.00 | 50.00 | | | | |
| Woodstock | D | | | 50.00 | 50.00 | | | | |

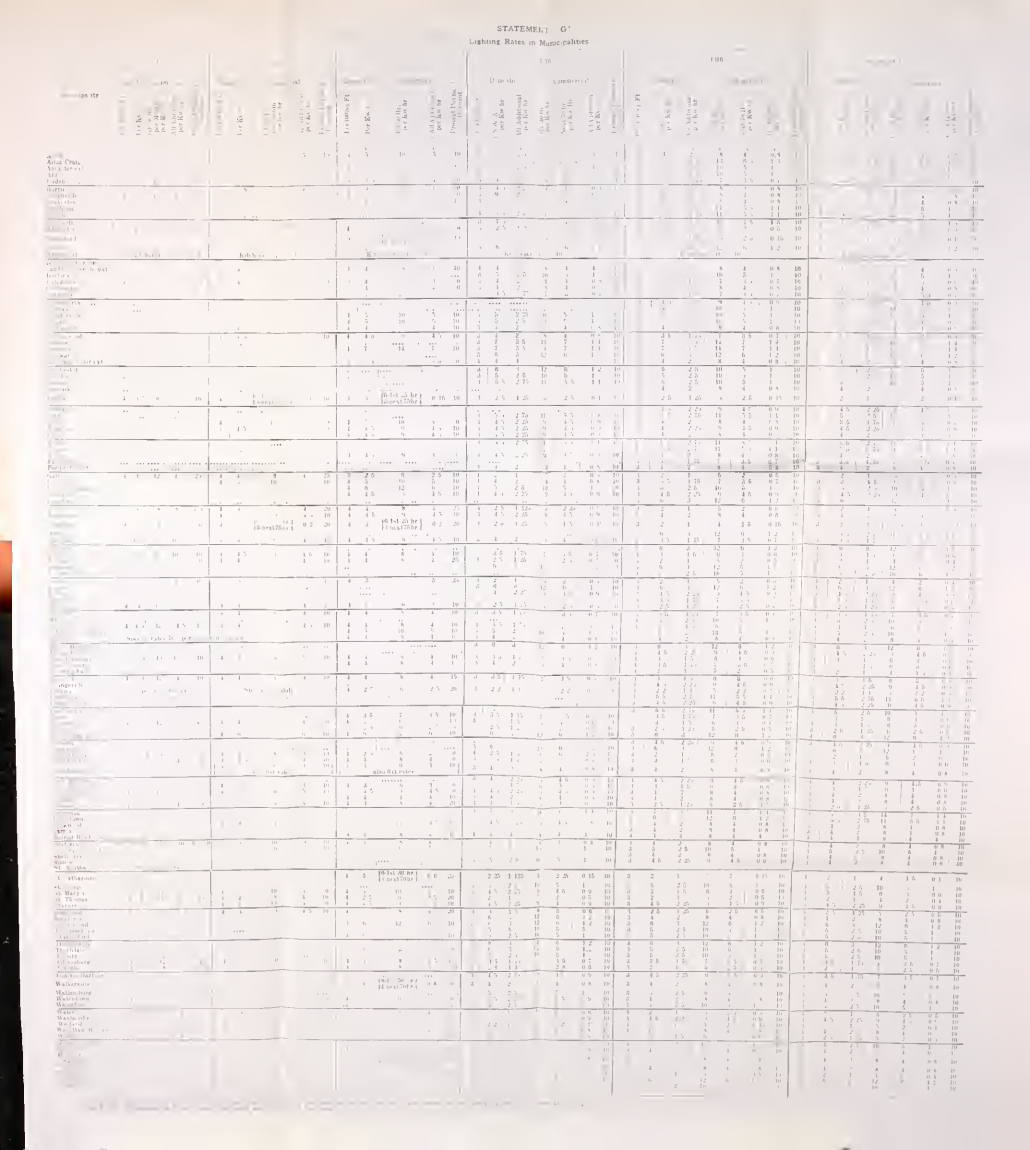
*Rate based on load characteristics and demand as end of year.

Note A - Power delivered at 25 cycles or 25,000 watts.
Note B - Power delivered at 60 cycles or 15,000 watts.
Note C - Power delivered at 4 cycles or
Note D - Power delivered at 2 cycles or 6,000 watts.

| Street | | |

STATEMENT G

Lighting Rates in Municipalities



# Ninth Annual Report

OF THE

# HYDRO-ELECTRIC POWER COMMISSION

OF THE

## PROVINCE OF ONTARIO

FOR THE YEAR ENDED OCTOBER 31st

## 1916

VOLUME III.

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PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

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TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1917

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

*To His Honour,* Colonel Sir John Hendrie, K.C.M.G., C.V.O.,

*Lieutenant-Governor of Ontario.*

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the third volume of the Ninth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1916.

Respectfully submitted,

Adam Beck,

*Chairman.*

Toronto, Ont., February 17th, 1917.

Colonel Sir Adam Beck, K.B., LL.D.,

*Chairman, Hydro-Electric Power Commission,*

*Toronto, Ont.*

Sir,—I have the honour to transmit herewith the third volume of the Ninth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1916.

I have the honour to be,

Sir,

Your obedient servant,

W. W. Pope,

*Secretary.*

# HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

COLONEL SIR ADAM BECK, K.B., LL.D., London, Chairman.

HON. I. B. LUCAS, M.P.P., Markdale, Commissioner.

COLONEL W. K. McNAUGHT, C.M.G., Toronto, Commissioner.

W. W. POPE, Secretary.

F. A. GABY, Chief Engineer.

# HYDRAULIC INVESTIGATIONS AND CONSTRUCTION

## MEASUREMENT OF STREAM FLOW

The systematic measurement of stream flow was begun in 1912, and has been carried on continuously up to the present time.

This hydrometric study of the important rivers of the Province, though so far extending over a period of time too short to be really comprehensive, has nevertheless resulted in the accumulation of an appreciable amount of valuable data, and has provided an absolutely necessary basis of computation for the proper study of hydraulic development, river improvement, and flood prevention.

It is only by means of some governmental agency that information on stream flow can be adequately secured. The value of the data being directly proportional to the period of time over which it has been taken, the process is essentially continuous. No individual or private enterprise, therefore, possibly can carry on a work the utility of which is dependent solely upon the consistent accumulation and compilation of data over a continuous and long period of years.

The run-off from 47,000 square miles of watershed is now under continuous observation, but this is only about 12 per cent. of the total area of the basins within the boundaries of the Province, and the great number of enquiries received with reference to the flow of the rivers of Ontario, indicates not only that the Hydro-Electric Power Commission is becoming recognized as the source for dependable data of this kind, but also the necessity of increasing the scope of the work to cover a much greater territory within the Province than it does at present. In this connection it is especially necessary that the rivers flowing into James Bay and in the Lake Superior district be brought under observation, as the success of the large number of mining and pulp industries in this territory is absolutely dependent upon the power of the rivers, which cannot be gauged by any means other than the systematic study and recording of their flow.

During the year 1916, conditions did not permit of the addition of new stations, or even of the desired amount of work on those already established, and the rivers covered are practically the same as those of the previous year. The discharge curves, however, are better defined as a result of measurements secured at river stages not reached during previous years, and the accuracy of the daily flow estimates has been increased to a corresponding extent.

Many very valuable power sites are situated in uninhabited country often difficult of access, where river stages cannot be brought under continuous observation. In such cases the only information secured has consisted of intermittent flow measurements taken by the metering parties on the occasion of such visits as they were able to make.

As previously pointed out in the 1915 report, this report includes only the information that has been secured during the current water year, November 1st, 1915, to October 31st, 1916.

## POWER AND STORAGE SURVEYS

### Niagara Power Development.

During 1916 surveys were carried on continuously in connection with the gathering of the detailed information necessary for the design of the Chippawa-Queenston power plant. The initial surveys for this scheme are described in the report of the Commission for 1915.

These surveys have necessitated the use of a comparatively large field force of engineers, and have included the securing of the necessary topographical information, core drill explorations of the rock surface, and hydrometric data of the Welland and Niagara Rivers. The hydrometric information covered the continuous reading of water levels along the Niagara River at essential locations, the measurements of flow in the Welland River, and at its mouth, and the study of velocities and surface filaments in the Niagara River at Chippawa, and at the power house location at Smeaton's curve.

The office staff has been increased to transcribe the above information to the drawings, and to proceed with the design of the necessary structures. Good progress has been made on the studies of the best methods of construction for the work, and the preliminary designs are well advanced.

### Nipissing Power Company.

The Nipissing Power Company, which was part of the assets of the Electric Power Company, taken over by the Provincial Government in May, 1916, is located on the South River near Powassan.

The natural flow of the stream must be augmented in the near future, by storage on its head waters. Studies were made during 1916, by the Commission on the possibilities of securing this storage at Cox's Chute, and designs of the necessary dams have been prepared.

The surge tank at present in use at the power plant is of wood construction, and has outlived its period of usefulness. During the summer surveys were made at the power house, and information collected for the design of a new tank. The necessary drawings for a new steel structure have been prepared and the Commission are now calling for tenders for its construction and erection.

### Lac Seul Gauge

Readings are taken twice daily on the gauge attached to the wharf at the main post of the Hudson's Bay Company, at Lac Seul. Considerable difficulty was experienced with this gauge during the high water of 1916, owing to movement taking place in the elevation of the wharf, and corrections have been applied for dates between which the gauge zero was checked. These water elevations are not used in connection with stream flow measurements, but only to obtain the stage of the lake.

## CROWN LEASES

Under the terms of Water-Power Leases issued by the Department of Lands, Forests and Mines, the plans and specifications covering the development of any power site owned by the Province, must be approved by the Commission, as a condition governing the issue of the lease. Two important matters were dealt with under this head during the past year.

The first was the development of the Mattagami Pulp and Paper Company at Smooth Rock Falls on the Mattagami River. This scheme involved the building of a large power plant and pulp mill at Smooth Rock Falls. This plant is under construction at the present time, in accordance with approved plans and specifications. Inspection of the works has been made from time to time.

The Abitibi Pulp and Paper Company, who have already a development at Iroquois Falls, submitted plans in August for a further power installation at Twin Falls on the Abitibi River. The plans involve the elimination of the Company's dam at Couchiching Falls, which controls the storage of Lake Abitibi. These plans for this development have been submitted for approval, and preliminary construction work is now in progress.

## POWER CONSTRUCTION

### SOUTH FALLS

The South Falls plant is located on the south branch of the Muskoka river. A resumé of the negotiations leading up to the acquisition of this plant from the Town of Gravenhurst was given in the report of the Commission for 1915, and the contemplated changes and additions to the plant were noted therein.

The work of extending the plant was commenced during September, 1915. A permanent road to the power house, and the subgrade for the wood-stave pipe were completed during the next six weeks. Cofferdams were put in for unwatering the head-works and tail race, the discharge water from old unit was diverted, and good progress made in the enlarging of tail race cut.

The excavation for the tail race and power house foundations was completed on January 10th, 1916. The first concrete in the power house was poured on January 11th, 1916, and the substructure was completed on March 27th, 1916. All of the above work was done by day labour, under the supervision of the Commission's engineers.

The power house superstructure was built under contract by Witchall & Son, of Toronto. Work was started on March 13th, and completed on May 27th, 1916.

The steel penstock, supplied by the Wm. Hamilton Company, of Peterboro, was delivered to the site in December, 1915, and the erection was completed on January 31st, 1916. The material for the wood-stave pipe, with the exception of sills and chocks, was supplied by the Pacific Coast Pipe Company; the erection being done by the Commission's working staff. The work of erection was started on April 4th, 1916, but owing to delays in delivery of sills, etc., was not finally completed until the end of June.

Some alterations had also to be made on the head works to accommodate the second pipe, this work being completed by April 4th, 1916.

The turbine, flywheel, butterfly valve, etc., supplied by the Wm. Hamilton Company, were delivered at South Falls, on June 28th, and the governor and relief valve on July 15th. These were erected in place and grouted in by July 24th, and the new unit was put on commercial load on August 25th, 1916.

The old unit was then shut down and the steel penstock emptied. Concrete saddles were built under it, earth and debris removed, and the pipe painted.

The wood-stave pipe is 946 feet long and 60 inches inside diameter, and is connected to the head works by means of a steel thimble 5 feet in diameter. The penstock at the lower end of the pipe is 64 feet long and 5 feet in diameter. It is

provided with a 48-inch diameter Tee connection for a future surge tank, and a 42-inch diameter cross-over connection to the old steel penstock in order that the capacity of the same may be increased when required.

The turbine is a 23-inch single runner horizontal Samson wheel in a cone-cylinder case, and is provided with a 3-ton, 60-inch diameter flywheel. The rated capacity is 1,060 mechanical horse-power at the generator coupling when operating at 102-foot head and 720 r.p.m. The unit is controlled by a Ludlow oil-pressure governor, and a governor-operated relief valve.

The turbine is direct connected to a 750 k.v.a., 60-cycle, three phase, 6,600-volt generator installed by the Canadian Westinghouse Company, of Hamilton, Ontario.

The capacity now installed in this plant, including the old unit, is about 1,500 electrical horse-power, and is now in continuous operation, supplying light and power to the municipalities of Gravenhurst and Huntsville.

### COBDEN

A hydro-electric power plant of about 135 electric horse-power, was completed for the village of Cobden during 1916. The preliminary report and estimate covering this development was published in the report of the Commission for 1915. This plant is designed to carry the lighting load of the village, and a small 10-hour industrial load.

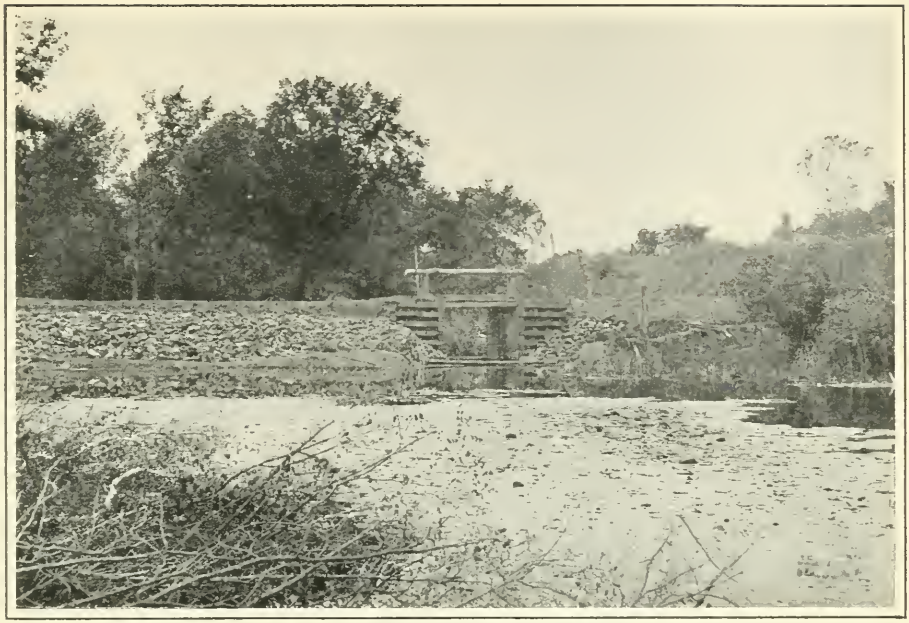
The designs for this plant were prepared, and the engineering work in general carried out by the Commission, on behalf of the municipality. The financing of the proposition was, however, a purely municipal undertaking, all costs being paid by the municipality.

The development scheme involved the construction of a storage dam at the outlet of Olmstead lake, from whence water is drawn through about 7 miles of natural channel to the pond at the original mill site, which is controlled by an old, but still serviceable stone and earth-fill dam. This old dam has been made part of the new development, and water is drawn from the pond through 200 feet of new head-race. After passing through a new concrete head-block, the water is carried to the wheels through a 30-inch wood-stave pipe.

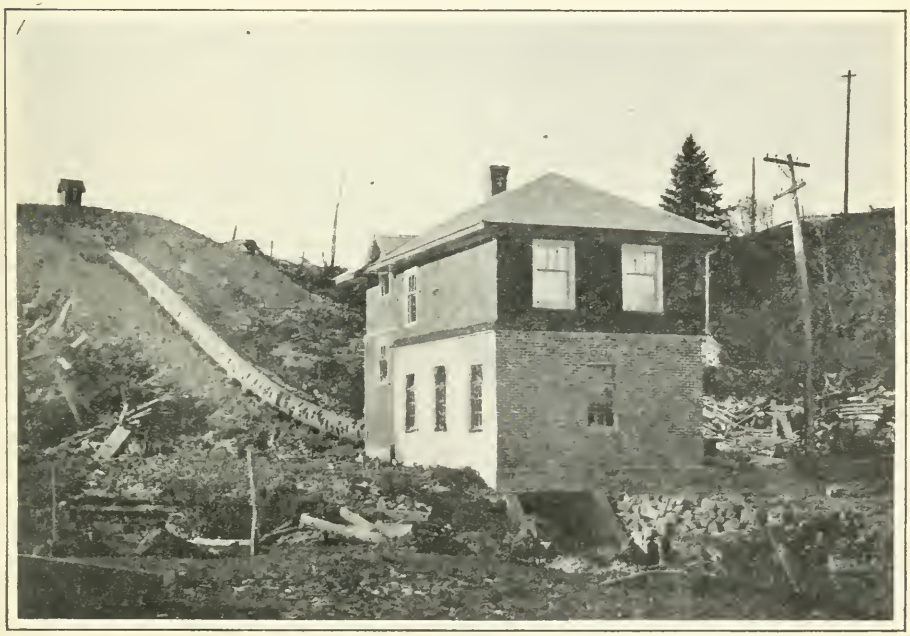
The storage dam is a small earth-filled crib structure controlling about 96,000,000 cubic feet of water, this volume of storage being considered sufficient to meet the anticipated load requirements.

The power house is an entirely new structure throughout, and as the plant is situated about a mile from the village, it was provided with an upper residential storey, and a rear annex for the operator and his family, the whole being designed to combine practical utility with homelike architectural features. The foundations are of solid concrete, except for a portion where the stone foundations of the old mill were utilized. The lower storey of the main building is pressed brick, and the upper storey and annex is of wood with stained shingle trim and roof. The building contains eight residential rooms in addition to the machine room, which opens directly into the living-room.

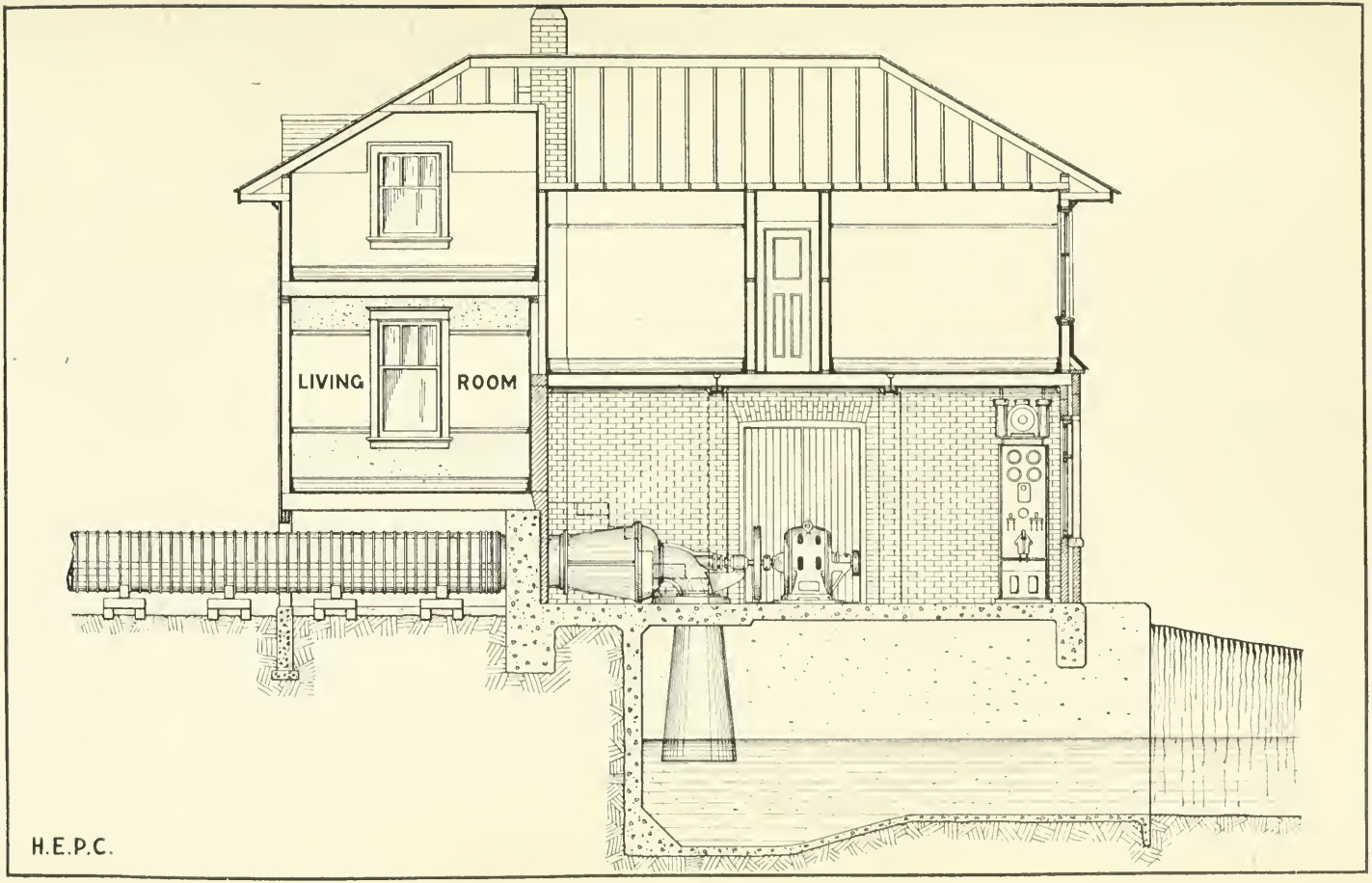
The machine installation consists of one Boving globe casing single runner turbine, of 160 H.P. capacity, running at 720 r.p.m., and provided with a fly-wheel coupling. Direct connected to the turbine is a Canadian General Electric Company generator, 3 phase, 60 cycle, 2,300 volts, and 100 k.v.a. capacity, with a belt driven exciter. The unit is controlled by a type "C" Woodward mechanical governor.



Cobden Development—Storage Dam at Olmstead Lake



Cobden Development—Combined Residence and Power House




Sectional Elevation of Combined Power House and Residence

This plant was tested out and put in commercial operation on November 24th, 1916, and has been operating satisfactorily and continuously since that date.

The plant as originally designed did not include the operator's residence, but apart from the increase in cost, which this change involved, the work was completed within the original estimates, in spite of the high cost of labour and materials, which could not be reasonably anticipated when the estimates were prepared.

## Almonte

In the spring of 1916, the Town of Almonte asked the Commission to investigate the possibilities of changing over their generating station and distribution system from direct to alternating current.

The station is located in the Town of Almonte on the Mississippi River, and operates under a 24-foot head.

A report on the hydraulic features involved, together with an estimate of the cost of changing over to alternating current was made in July. Following the recommendations made in this report, the town proceeded with the work of remodelling the plant under the direction of the engineers of the Commission.

The old equipment consisted of a pair of 42-inch diameter Barber turbines, horizontal setting, belt connected to a countershaft driving three-belted direct current generators of 130 k.w. total capacity.

The two wheels were originally coupled together with a flange coupling, but this coupling broke due to vibration in the setting, so that at the time of inspection the wheels were working independently, though belted to the same jack shaft.

It was decided to extend the turbine shaft through the power house wall and place a single new A.C. generator in a new building to be erected against the wall of the existing power house. This arrangement ensured a solid foundation for the generator, and placed the drive belt well away from any leakage or dampness from the turbine casing.

A pit for the drive pulley was excavated in rock and lined with concrete, and a concrete foundation constructed for the generator. A neat frame building 15 feet x 19 feet was erected, to house the generator and exciter, and a frame housing was built over the pulley pit and belt. The centre line of the generator was set eighteen feet five inches above, and nineteen feet over, from the centre line of the turbine shaft.

With this arrangement it was necessary to lengthen the turbine shaft six feet four inches, but as the drive was to be all from one end it was necessary to remove the old shaft from the near wheel, and replace it with a 5-inch shaft 19 feet 6 inches long. This new shaft was procured, the necessary key seats cut, and collars turned for thrust bearings. New thrust bearings were purchased, being standard bearings 4 15-16 inches x 15 inches with adjustable base plates, and babbitted to fit the thrust collars on the shaft.

When all was in readiness, the plant was shut down, the top of the wheel casing was dismantled and both shafts removed from the runners. One runner was taken to a local machine shop, where it was rebored to fit the new 5-inch shaft, and the end of the other shaft was turned and fitted to receive one-half of the jaw coupling.

The runner was then replaced and pressed onto the new shaft, and when the jaw coupling, new stuffing box and dome bushings had been placed, the shafts were lined up and the thrust bearings grouted.

New lignum vitae bearings were placed inside the casing, one on either side of the jaw coupling. These bearings were bolted to cast iron supports, resting on each side of the wooden wheel casing, and as the wet wood had proved to be far from rigid, new cast iron struts were placed so as to form knee braces from the bearings to the iron floor of the casing.

Owing to the bearings not being rigid, during the period of previous operation, the perimeter of the runners had become badly worn, causing considerable leakage. To remedy this a ¾-inch x 1½-inch bar bent to the radius of the runner, was riveted to the inside of the cowl close up to the runner to ensure a more efficient water seal.

The thrust bearings were located near the outer edge of the new shaft, one on either side of the 58-inch drive pulley. This pulley, as also the 46-inch pulley on the generator shaft, is an iron centre wood rim split pulley with a 20-inch face.

The belt is 3-ply leather 20-inch x 69 feet 3 inches, and drives the new 250 k.w. 60-cycle, 2,200-volt, three-phase Westinghouse generator.

The plant has been operating quite satisfactorily since the change has been made.

# STREAM FLOW DATA

## Regular Stations

### EASTERN ONTARIO DISTRICT

| River | Location | Drainage Area Sq. Miles | Township | County |
|---|---|---|---|---|
| Bonnechere | near Eganville | 670 | Wilberforce | Renfrew |
| " | near Golden Lake | 575 | South Algona | " |
| " | at Renfrew | 910 | Horton | " |
| Madawaska | at Flat Rapids | 3,210 | McNab | " |
| " | at Madawaska | 800 | Murchison | " |
| Mississippi | at Ferguson's Falls | 1,042 | Drummond | " |
| " | at Galetta | 1,456 | Fitzroy | Carleton |
| " | near Snow Road | 446 | Sherbrooke | Lanark |
| Moira | near Foxboro | 1,038 | Thurlow | Hastings |
| Napanee | near Napanee | 300 | Camden | Addington |
| Tay | near Glen Tay | 204 | Bathurst | Lanark |
| York | near Bancroft | 374 | Faraday | Hastings |

## Bonnechere River near Eganville

**Location**—400 feet downstream from McCrae's Power Plant, and one mile from the Village of Eganville, near lot 16, concession 6, Township of Wilberforce, County of Renfrew.

**Records Available**—Discharge measurements from September, 1916. Gauge readings from September 24, 1915.

**Drainage Area**—670 square miles.

**Gauge**—Points on the rock bottom of the river from which direct readings are made to the water surface.

**Channel and Control**—The channel is slightly curved from the power house above and straight for ½ mile below the section. The bed of the river is shale, solid rock, and stones in some places. The banks are high, rocky and wooded, and not liable to overflow.

**Discharge Measurements**—Made by wading in section with the gauge at most stages, but frequently a few hundred yards further upstream at suitable low stages for better results.

**Winter Flow**—The relation between gauge heights and discharge is seriously disturbed during winter months, and estimates for that period are not more than fair.

**Regulation**—McCrae's plant and dam is a short distance above the section, and there is another dam at Eganville, and one between. The flow is further regulated by the operation of the Round Lake Dam and the lumber dams on tributary streams.

**Accuracy**—Good for open channel measurements.

**Observer**—H. Welk, Eganville.

### Discharge Measurements of Bonnechere River near Eganville in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 20.... | West, C. W. .... | 55 | 71 | 2.47 | 100.50 | 177 | ..... |
| Dec. 10.... | " .... | 53 | 74 | 2.13 | 100.71 (a) | 157 | ..... |
| 1916 | | | | | | | |
| Jan. 27.... | Campbell, L. L. . | 53 | 96 | 2.43 | 101.83 | 233 (b) | ..... |
| Mar. 30.... | Campbell, L. L. . | ..... | ..... | ..... | 103.22 | 338 (c) | ..... |
| " 31.... | " | ..... | ..... | ..... | 103.22 | 337 (c) | ..... |
| Apr. 14.... | " | ..... | ..... | ..... | 101.67 | 542 (c) | ..... |
| May 22.... | " | ..... | ..... | ..... | 103.09 | 1,408 (c) | ..... |
| June 16.... | McLennan, C. C. | 149 | 456 | 2.40 | 102.37 | 1,094 (d) | ..... |
| July 11.... | " | 141 | 286 | 2.29 | 101.60 | 656 | ..... |

(a) Ice along edges of control causes considerable effect at section.
(b) Section almost entirely ice covered.
(c) Weir measurement.
(d) Measurement below regular section.

## Bonnechere River near Golden Lake

Location—At the highway bridge between Golden Lake Station and Village, in the Township of South Algona, County of Renfrew.

Records Available—Discharge measurements from June, 1915. Daily gauge heights from June 26, 1915.

Drainage Area—575 square miles.

Gauge—Elevations of water surface made by indirect readings from a point on the bridge, whose elevation is checked monthly.

Channel and Control—Bays exist above and below the section, the current being very slow up to the bridge. The flow is confined between the abutments of the bridge at all stages. The bed of the river is well protected by large boulders, and is not subject to change.

Winter Flow—Slightly affected by ice.

Regulation—The flow is regulated to the capacity of the Round Lake Dam for storage purposes, and the lumber industry has flood dams on some of the tributary waters.

Accuracy—Mean of daily readings give good results for stage readings. Calculations have been applied to compensate for dam effect in the spring and autumn of 1916.

Observer—Mary Sunstrum, Golden Lake.

### Discharge Measurements of Bonnechere River near Golden Lake in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 22.... | West, C. W. .... | 108 | 238 | .80 | 555.24 | 193 (a) | ..... |
| Dec. 13.... | " .... | 108 | 239 | .64 | 555.21 | 153 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 29.... | Campbell, L. L. . | 110 | 273 | .94 | 555.46 | 256 (a) | ..... |
| Feb. 26.... | McLennan, C. C. | 112 | 316 | 1.10 | 555.99 | 347 (b) | ..... |
| Mar. 24.... | " | 112 | 304 | 1.01 | 555.82 | 306 (b) | ..... |
| May 8.... | " | 121 | 766 | 3.09 | 559.42 | 2,362 (c) | ..... |
| " 9.... | " | 121 | 722 | 3.74 | 559.31 | 2,700 (d) | ..... |
| " 9.... | " | 121 | 697 | 3.99 | 559.11 | 2,780 (e) | ..... |
| " 10.... | " | 121 | 686 | 3.89 | 559.01 | 2,670 (f) | ..... |
| " 18.... | " | 121 | 598 | 3.36 | 558.30 | 2,010 (f) | ..... |
| " 20.... | " | 121 | 586 | 3.24 | 558.24 | 1,900 | ..... |
| June 10.... | Campbell, L. L. . | 121 | 447 | 2.41 | 557.19 | 1,078 | ..... |
| July 13.... | " | 117 | 373 | 1.73 | 556.43 | 647 | ..... |
| Sept. 9.... | McLennan, C. C. | 112 | 325 | 1.06 | 555.91 | 346 | ..... |
| " 9.... | " | 126 | 209 | 1.65 | 555.90 | 344 | ..... |
| Oct. 30.... | Campbell L. L. . | 109 | 303 | .40 | 555.69 | 121 (g) | ..... |

(a) Ice on lake, section free.
(b) Dam in course of construction just below control.
(c) Dam influence—high swell on lake.
(d) Dam influence—part spillway gone.
(e) Dam influence—all spillway gone.
(f) Dam influence.
(g) New dam under construction.

# Daily Gauge Height and Discharge of Bonnechere River near Golden Lake for 1915-6

Drainage Area 575 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 555.04 | 117 | 555.16 | 144 | 555.30 | 180 | 555.56 | 259 | 555.98 | 360 | 555.59 | 190 | 559.25 | 2460 | 557.66 | 1440 | 556.14 | 515 | 555.86 | 378 | 555.68 | 307 | 555.51 | 246 |
| 2 | 555.02 | 113 | 555.16 | 144 | 555.28 | 175 | 555.59 | 269 | 555.98 | 360 | 555.75 | 227 | 559.25 | 2460 | 557.53 | 1370 | 556.44 | 650 | 555.86 | 378 | 555.76 | 337 | 555.56 | 263 |
| 3 | 554.99 | 107 | 555.14 | 138 | 555.30 | 180 | 555.59 | 269 | 555.98 | 360 | 555.92 | 313 | 559.00 | 2200 | 557.53 | 1330 | 556.36 | 610 | 555.79 | 348 | 555.81 | 357 | 555.60 | 277 |
| 4 | 555.00 | 109 | 555.16 | 144 | 555.28 | 175 | 555.60 | 272 | 555.96 | 351 | 556.17 | 420 | 559.30 | 2510 | 557.49 | 1300 | 556.36 | 610 | 555.76 | 338 | 555.86 | 378 | 555.51 | 246 |
| 5 | 555.02 | 113 | 555.16 | 144 | 555.30 | 180 | 555.60 | 272 | 555.96 | 351 | 556.50 | 585 | 559.30 | 2510 | 557.45 | 1270 | 556.34 | 600 | 555.76 | 338 | 555.91 | 400 | 555.40 | 208 |
| 6 | 555.05 | 119 | 555.16 | 138 | 555.30 | 180 | 555.60 | 272 | 555.96 | 351 | 556.50 | 585 | 559.25 | 2460 | 557.41 | 1240 | 556.32 | 590 | 555.76 | 338 | 555.96 | 422 | 555.40 | 208 |
| 7 | 555.05 | 119 | 555.14 | 138 | 555.30 | 180 | 555.60 | 272 | 555.98 | 360 | 556.67 | 680 | ..... | 2420 | 557.37 | 1210 | 556.32 | 590 | 555.76 | 338 | 555.98 | 431 | 555.46 | 228 |
| 8 | 555.06 | 120 | 555.15 | 141 | 555.30 | 180 | 555.60 | 272 | 555.96 | 351 | 557.00 | 860 | 559.17 | 2360 | 557.32 | 1170 | 556.32 | 590 | 555.76 | 338 | 556.00 | 440 | 555.47 | 232 |
| 9 | 555.09 | 126 | 555.15 | 141 | 555.32 | 186 | 555.58 | 266 | 555.96 | 351 | 557.09 | 920 | 558.58 | 2780 | 557.22 | 1100 | 556.32 | 590 | 555.76 | 338 | 555.86 | 378 | 555.48 | 235 |
| 10 | 555.06 | 120 | 555.16 | 144 | 555.32 | 186 | 555.58 | 266 | 555.94 | 341 | 557.17 | 870 | 558.41 | 2670 | 557.11 | 1030 | 556.36 | 610 | 555.66 | 299 | 555.76 | 337 | 555.44 | 222 |
| 11 | 555.05 | 119 | 555.16 | 144 | 555.32 | 186 | 555.56 | 259 | 555.96 | 351 | 557.34 | 990 | 558.57 | 2240 | 557.08 | 1010 | 556.28 | 570 | 555.66 | 299 | 555.66 | 299 | 555.46 | 228 |
| 12 | 555.08 | 124 | 555.16 | 144 | 555.30 | 180 | 555.57 | 262 | 555.96 | 351 | 557.67 | 1250 | 558.48 | 2150 | 556.99 | 955 | 556.31 | 585 | 555.66 | 299 | 555.64 | 292 | 555.40 | 208 |
| 13 | 555.10 | 126 | 555.16 | 144 | 555.32 | 186 | 555.61 | 276 | 555.96 | 351 | 557.84 | 1390 | 558.55 | 2220 | 556.93 | 915 | 556.26 | 560 | 555.59 | 273 | 555.62 | 284 | 555.52 | 249 |
| 14 | 555.16 | 141 | 555.17 | 146 | 555.32 | 186 | 555.66 | 293 | 555.94 | 341 | 558.09 | 1490 | 558.38 | 2060 | 536.91 | 900 | 556.24 | 550 | 555.56 | 263 | 555.62 | 284 | 555.46 | 228 |
| 15 | 555.18 | 149 | 555.16 | 144 | 555.32 | 186 | 555.67 | 296 | 555.93 | 329 | 558.25 | 1640 | 558.28 | 1960 | 556.91 | 900 | 556.26 | 560 | 555.56 | 263 | 555.62 | 284 | 555.46 | 228 |
| 16 | 555.22 | 159 | 555.20 | 154 | 555.32 | 186 | 555.72 | 276 | 555.92 | 323 | 558.50 | 1870 | 558.36 | 2040 | 557.11 | 1030 | 556.15 | 510 | 555.56 | 263 | 555.61 | 281 | 555.46 | 228 |
| 17 | 555.20 | 154 | 555.20 | 154 | 555.30 | 180 | 555.78 | 298 | 555.92 | 323 | 558.75 | 2040 | 558.51 | 2180 | 557.07 | 1000 | 556.21 | 540 | 555.46 | 228 | 555.56 | 263 | 555.46 | 228 |
| 18 | 555.20 | 154 | 555.18 | 149 | 555.31 | 183 | 555.80 | 305 | 555.88 | 317 | 559.00 | 2300 | 558.28 | 2010 | 556.91 | 900 | 556.09 | 480 | 555.46 | 228 | 555.51 | 245 | 555.48 | 236 |
| 19 | 555.22 | 159 | 555.20 | 154 | 555.31 | 183 | 555.81 | 309 | 555.88 | 317 | 559.00 | 2200 | 558.20 | 1890 | 556.86 | 870 | 556.06 | 468 | 555.46 | 228 | 555.51 | 245 | 555.46 | 228 |
| 20 | 555.20 | 154 | 555.20 | 154 | 555.30 | 180 | 555.86 | 329 | 555.86 | 309 | 559.09 | 2280 | 558.20 | 1900 | 556.76 | 810 | 556.03 | 454 | 555.46 | 228 | 555.51 | 245 | 555.46 | 228 |
| 21 | 555.22 | 159 | 555.20 | 154 | 555.30 | 180 | 555.86 | 329 | 555.87 | 313 | 559.17 | 2370 | 558.12 | 1820 | 556.66 | 755 | 556.03 | 454 | 555.46 | 228 | 555.59 | 274 | 555.46 | 228 |
| 22 | 555.20 | 154 | 555.21 | 157 | 555.30 | 180 | 555.88 | 337 | 555.90 | 325 | 559.17 | 2370 | 558.08 | 1780 | 556.59 | 715 | 556.06 | 468 | 555.41 | 211 | 555.53 | 242 | 555.56 | 263 |
| 23 | 555.22 | 159 | 555.21 | 157 | 555.32 | 186 | 555.88 | 337 | 555.89 | 321 | 559.25 | 2460 | 558.03 | 1740 | 556.32 | 675 | 556.06 | 468 | 555.36 | 195 | 555.53 | 242 | 555.61 | 281 |
| 24 | 555.26 | 170 | 555.24 | 164 | 555.32 | 186 | 555.88 | 337 | 555.90 | 306 | 559.42 | 2640 | 557.99 | 1720 | 556.46 | 645 | 556.03 | 454 | 555.36 | 195 | 555.52 | 242 | 555.63 | 288 |
| 25 | 555.26 | 170 | 555.26 | 170 | 555.36 | 197 | 555.88 | 337 | 555.90 | 305 | 559.42 | 2640 | 557.95 | 1680 | 556.46 | 645 | 556.03 | 454 | 555.36 | 195 | 555.51 | 245 | 555.61 | 281 |
| 26 | 555.23 | 162 | 555.26 | 170 | 555.40 | 208 | 555.99 | 384 | 555.90 | 305 | 559.42 | 2640 | 557.91 | 1640 | 556.36 | 595 | 556.06 | 468 | 555.36 | 195 | 555.48 | 236 | 555.61 | 281 |
| 27 | 555.22 | 159 | 555.30 | 180 | 555.46 | 227 | 555.98 | 379 | 555.90 | 305 | 559.25 | 2460 | 557.87 | 1610 | 556.41 | 620 | 555.98 | 431 | 555.41 | 211 | 555.46 | 228 | 555.61 | 281 |
| 28 | 555.18 | 149 | 555.29 | 177 | 555.50 | 240 | 555.96 | 371 | 555.90 | 305 | 559.34 | 2550 | 557.83 | 1570 | 556.16 | 500 | 555.98 | 431 | 555.46 | 228 | 555.42 | 215 | 555.61 | 281 |
| 29 | 555.18 | 149 | 555.28 | 174 | 555.56 | 259 | 555.96 | 371 | 555.91 | 310 | 559.42 | 2640 | 557.78 | 1530 | 556.31 | 570 | 556.06 | 468 | 555.46 | 228 | 555.48 | 236 | 555.61 | 281 |
| 30 | 555.16 | 144 | 555.28 | 174 | 555.56 | 259 | ..... | .... | 556.01 | 422 | 559.25 | 2460 | 557.74 | 1500 | 556.26 | 545 | 555.94 | 431 | 555.66 | 299 | 555.46 | 228 | 555.66 | 299 |
| 31 | ..... | .... | 555.30 | 177 | 555.56 | 259 | ..... | .... | 556.01 | 422 | ..... | .... | 557.70 | 1470 | ..... | .... | 555.86 | 378 | 555.68 | 307 | ..... | .... | 555.66 | 299 |

## Monthly Discharge of Bonnechere River near Golden Lake for 1915-6

Drainage Area, 575 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 170 | 107 | 139 | .30 | .19 | .24 | .27 |
| December " | 180 | 138 | 153 | .31 | .24 | .27 | .31 |
| January .. (1916) | 259 | 175 | 194 | .45 | .30 | .34 | .39 |
| February ..... | 384 | 259 | 303 | .67 | .45 | .52 | .56 |
| March ..... | 422 | 305 | 338 | .73 | .52 | .59 | .68 |
| April..... | 2,640 | 190 | 1,611 | 4.59 | .33 | 2.80 | 3.12 |
| May..... | 2,780 | 1,470 | 2,050 | 4.83 | 2.56 | 3.57 | 4.12 |
| June 26-30..... | 1,440 | 545 | 934 | 2.50 | .95 | 1.62 | 1.81 |
| July..... | 650 | 378 | 521 | 1.13 | .66 | .91 | 1.05 |
| August..... | 378 | 195 | 274 | .66 | .34 | .48 | .55 |
| September..... | 440 | 215 | 297 | .77 | .37 | .52 | .58 |
| October..... | 299 | 208 | 249 | .52 | .36 | .43 | .50 |
| The year ..... | 2,780 | 107 | 588 | 4.83 | .19 | 1.02 | 13.88 |

## Bonnechere River at Renfrew

**Location**—One-half mile below Raglan St., Town of Renfrew, Township of Horton, County of Renfrew, on the Barnett Estate.

**Records Available**—Discharge measurements from September, 1916. Daily gauge readings from November 1, 1916.

**Drainage Area**—910 square miles.

**Gauge**—On the right bank of the river at the section, a box chain gauge with nine feet of standard gauge plates. Distance from end of weight to marker is 12.43 feet.

**Channel and Control**—The channel is straight for 100 feet above and 300 feet below the station, but both above and below the station long sharp curves occur. There is a high clay bank on the right, and a low clay bank on the left. At extreme high water there may be an escape from this channel of some water from higher above the section to points below the section. The bed of the stream is composed of clean small stones.

**Winter Flow**—Little ice effect expected, though on occasions frazil ice from the rapids above may make meter measurements difficult.

**Regulation**—The Round Lake Dam, the Golden Lake Dam for power purposes, and the dams on the upper river for lumbering purposes have large regulating effects on this river. The power plants in Renfrew, running twenty-four hours to their full capacity, and having little pondage, will not seriously affect the estimate of mean gauge heights.

**Observer**—William Collie, 88 Bank St., Renfrew.

### Discharge Measurements of Bonnechere River at Renfrew for 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| Sept. 11.... | McLennan, C. C. | 83 | 170 | 2.09 | 103.13 | 356 | ..... |
| " 11.... | " | 83 | 171 | 2.11 | 103.13 | 361 | ..... |
| Oct. 26.... | " | 81 | 134 | 1.90 | 102.81 | 254 | ..... |

## Madawaska River at Flat Rapids

Location—Near lot 7, concession 9, Township of McNab, County of Renfrew, half mile below Flat Rapids.

Records Available—High-water measurements during 1915 and 1916 to be used in conjunction with low-water measurements at this section for application to gauge readings taken at Claybank by the Ottawa River Storage Survey, from April 15, 1909. Discharge measurements commenced in October, 1916, at this section, and September, 1915, at high-water section.

Drainage Area—3,210 square miles.

Gauge—Nine feet of standard gauge plates on the boom crib 1,000 feet below the Claybank bridge, about 1,500 feet below the high water section, and 3 miles below the low water section.

Channel and Control—Channel is straight for 3,000 feet above and 500 feet below the station and favorably fast current exists for metering purposes. Clay and gravel banks, high on the right bank, medium, to low on the left bank, but the river is not liable to overflow. The flow is through one channel at high and low stages and through two channels at medium stages. Possibly frazil ice may be expected on some days.

Discharge Measurements—From boat and ice.

Winter Flow—Gauge height discharge relation will be considerably affected by ice, but likely to be capable of close estimation from discharge measurements.

Regulation—There are no powers developed on the river as yet, though construction has started on one at the foot of Calabogie Lake, which will have considerable regulating effect on the river below, but possibly not acting rapidly enough to disturb the gauge height discharge daily estimate. The storage works for lumbering purposes on the upper river and its tributaries are still in use.

Observer—Narcisse Jandreau, R. R. Arnprior.

### Discharge Measurements of Madawaska River at Claybank in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 25.... | West, C. W .... | 322 | 4,696 | .32 | 260.54 | 1,485 | ..... |
| Dec. 17.... | " .... | 316 | 4,543 | .27 | 260.59 | 1,235 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 24.... | Campbell, L. L... | 318 | 4,283 | .39 | 260.88 | 1,669 (a) | ..... |
| Feb. 12.... | McLennau, C. C.. | 324 | 4,484 | .66 | 260.79 | 2,954 (a) | ..... |
| Apr. 19.... | Campbell, L. L... | 348 | 6,584 | 2.08 | 265.96 | 13,694 | ..... |
| May 23.... | " .. | 344 | 5,962 | 1.70 | 264.29 | 10,125 | ..... |
| June 14.... | McLennan, C. C.. | 337 | 5,520 | 1.31 | 262.92 | 7,255 | ..... |
| July 10.... | " .. | 331 | 5,083 | .73 | 261.83 | 3,701 | ..... |
| Oct. 12.... | Campbell, L. L... | 230 | 2,085 | .56 | 260.29 | 1,176 | ..... |

(a) Ice measurement.

## Madawaska River at Madawaska

**Location**—50 feet above the G.T. Ry. bridge, Canada Atlantic branch, 500 yards east of the Madawaska Station, Township of Murchison, District of Nipissing.

**Records Available**—Discharge measurements from September, 1915, and monthly thereafter, and gauge readings from September 27, 1915.

**Drainage Area**—800 square miles.

**Gauge**—Three feet of standard gauge plates secured vertically to pile, three feet west of face of east abutment.

**Channel and Control**—Channel is straight for about 400 feet above the section, curving slightly to the right under the bridge. The banks are sandy, and not liable to overflow. The bed of the river is soft, and there are some weeds above the section. The point of control is not clearly defined.

**Discharge Measurements**—Made about fifty feet above gauge from a boat.

**Winter Flow**—Affected by ice conditions.

**Regulation**—Lumber interests on the river above the section operate dams for driving purposes.

**Accuracy**—Open water rating curve for ordinary stages likely to be very good.

**Observer**—G. Wormke, Madawaska.

### Discharge Measurements of Madawaska River at Madawaska in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 22.... | West, C. W. .... | 75 | 461 | .55 | 101.75 | 253 (a) | ..... |
| Dec. 13.... | " .. | 75 | 421 | .57 | 101.69 | 238 (b) | ..... |
| 1916 | | | | | | | |
| Jan. 31.... | Campbell, L. L.. | 70 | 520 | 1.21 | 104.92 | 633 (b) | ..... |
| Feb. 28.... | McLennan, C. C. | 78 | 487 | .92 | 104.33 | 446 (b) | ..... |
| Mar. 25.... | " .. | 75 | 409 | .68 | 103.50 | 279 (b) | ..... |
| Apr. 17.... | Campbell, L. L. . | 104 | 1,180 | 2.15 | 109.30 | 2,531 | ..... |
| May 20.... | McLennan, C. C.. | 102 | 1,129 | 1.89 | 108.89 | 2,132 | ..... |
| June 16.... | Campbell, L. L. . | 86 | 644 | .96 | 104.00 | 620 | ..... |
| July 13.... | " .. | 81 | 563 | .80 | 103.07 | 449 | ..... |
| Sept. 9.... | McLennan, C. C.. | 76 | 474 | .46 | 101.60 | 216 (c) | ..... |
| Oct. 27.... | Campbell, L. L. . | 79 | 498 | .54 | 102.25 | 267 | ..... |

(a) Weeds may effect, ice on both edges of section.
(b) Ice measurement.
(c) Weeds near left bank caused very irregular flow.

## Daily Gauge Height and Discharge of Madawaska River at Madawaska, for 1915-6

Drainage Area 800 Square Miles.

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 101.83 | 261 | 103.50 | 525 | 102.00 | 284 | 105.17 | 675 | 104.25 | 432 | 107.00 | 1270 | 110.04 | 3280 | 106.83 | 1220 | 103.79 | 575 | 101.60 | 227 | 101.50 | 213 | 101.46 | 207 |
| 2 | 101.79 | 255 | 102.92 | 429 | 102.12 | 297 | 105.17 | 670 | 104.21 | 424 | 107.00 | 1270 | 110.00 | 3240 | 106.50 | 1140 | 103.92 | 600 | 101.62 | 230 | 101.48 | 211 | 101.42 | 202 |
| 3 | 101.75 | 249 | 102.79 | 408 | 102.25 | 312 | 105.17 | 670 | 104.08 | 402 | 108.67 | 1930 | 109.88 | 3120 | 106.48 | 1130 | 104.08 | 625 | 101.62 | 230 | 101.42 | 202 | 101.35 | 192 |
| 4 | 101.75 | 249 | 102.67 | 389 | 102.17 | 297 | 105.08 | 650 | 104.00 | 388 | 108.00 | 1590 | 109.83 | 3070 | 106.29 | 1090 | 104.10 | 630 | 101.62 | 230 | 101.42 | 202 | 101.27 | 181 |
| 5 | 101.75 | 249 | 102.25 | 324 | 102.38 | 326 | 105.08 | 645 | 104.02 | 389 | 107.00 | 1270 | 109.62 | 2860 | 106.25 | 1070 | 103.94 | 600 | 101.62 | 230 | 101 71 | 244 | 101.25 | 178 |
| 6 | 101.75 | 249 | 102.00 | 287 | 102.38 | 321 | 105.08 | 645 | 103.82 | 356 | 106.33 | 1090 | 109.33 | 2570 | 106.17 | 1060 | 103.73 | 565 | 101.62 | 230 | 101.88 | 269 | 101.23 | 175 |
| 7 | 101.75 | 249 | 101.62 | 230 | 102.27 | 302 | 105.08 | 640 | 103.83 | 356 | 106.25 | 1080 | 109.12 | 2360 | 105.75 | 950 | 103.62 | 545 | 101.62 | 230 | 101.77 | 253 | 101.17 | 167 |
| 8 | 101.75 | 249 | 101.50 | 213 | 102.21 | 288 | 105.00 | 625 | 103.92 | 468 | 105.92 | 995 | 108.71 | 1970 | 105.38 | 875 | 103 52 | 530 | 101.71 | 244 | 101.73 | 246 | 101.17 | 167 |
| 9 | 101.75 | 249 | 101.52 | 216 | 102.33 | 303 | 105.75 | 755 | 104.00 | 380 | 105.85 | 980 | 108.42 | 1780 | 105.46 | 890 | 103.35 | 498 | 101.77 | 253 | 101.60 | 227 | 101 17 | 167 |
| 10 | 101.75 | 249 | 101.75 | 249 | 102.46 | 318 | 105.83 | 770 | 103.83 | 351 | 105.92 | 995 | 108.12 | 1640 | 105.58 | 915 | 103.25 | 482 | 101.75 | 249 | 101.52 | 216 | 101.17 | 167 |
| 11 | 101.75 | 249 | 101,75 | 249 | 102.50 | 320 | 105.50 | 705 | 103.83 | 350 | 105.83 | 975 | 108.46 | 1800 | 105.48 | 895 | 103.17 | 469 | 101.77 | 253 | 101.48 | 211 | 101.17 | 167 |
| 12 | 101.75 | 249 | 101.67 | 237 | 102.23 | 276 | 105.33 | 670 | 103.88 | 356 | 106.35 | 1100 | 108.50 | 1820 | 105.38 | 875 | 103.15 | 466 | 101.77 | 253 | 101.42 | 202 | 101.15 | 164 |
| 13 | 101.75 | 249 | 101.67 | 237 | 102.54 | 320 | 105.00 | 605 | 103.92 | 360 | 106.33 | 1090 | 108.33 | 1730 | 105.27 | 850 | 103.04 | 448 | 101.75 | 249 | 101.40 | 199 | 101.19 | 170 |
| 14 | 101.75 | 249 | 101.71 | 244 | 102.50 | 309 | 104.83 | 570 | 103.92 | 359 | 106.67 | 1180 | 107.92 | 1560 | 105.15 | 825 | 102.92 | 429 | 101.69 | 240 | 101.34 | 191 | 101.25 | 178 |
| 15 | 101.75 | 249 | 101.75 | 249 | 102.50 | 305 | 104.71 | 550 | 103.79 | 338 | 107.54 | 1430 | 107.67 | 1500 | 104.83 | 765 | 102.90 | 426 | 101.65 | 234 | 101.33 | 189 | 101.25 | 178 |
| 16 | 101.67 | 237 | 101.75 | 249 | 102.50 | 302 | 104.71 | 545 | 103.75 | 331 | 108.60 | 1890 | 107.90 | 1550 | 104.17 | 635 | 102.92 | 429 | 101.62 | 230 | 101.33 | 189 | 101.25 | 178 |
| 17 | 101.67 | 237 | 101.79 | 255 | 102.42 | 287 | 104.67 | 535 | 103.75 | 329 | 109.48 | 2720 | 109.04 | 2280 | 103.98 | 610 | 102.83 | 415 | 101.62 | 230 | 101.33 | 189 | 101.58 | 224 |
| 18 | 101.67 | 237 | 101.92 | 275 | 102.50 | 294 | 104.58 | 515 | 103.71 | 321 | 110.15 | 3390 | 109.25 | 2490 | 104.04 | 620 | 102.83 | 415 | 101.62 | 230 | 101.29 | 184 | 101.69 | 240 |
| 19 | 101.71 | 244 | 101.83 | 261 | 102.50 | 290 | 104.58 | 515 | 103.67 | 314 | 109.88 | 3120 | 109.17 | 2410 | 104.12 | 635 | 102.77 | 405 | 101.58 | 224 | 101.31 | 186 | 101.67 | 238 |
| 20 | 101.83 | 261 | 101.81 | 259 | 102.75 | 324 | 104.54 | 505 | 103.58 | 299 | 109.73 | 2970 | 108.94 | 2180 | 104.15 | 640 | 102.75 | 402 | 101.58 | 224 | 101.33 | 189 | 102.17 | 313 |
| 21 | 101.83 | 261 | 101.75 | 249 | 102.79 | 327 | 104.54 | 500 | 103.62 | 304 | 109.73 | 2970 | 108.67 | 1940 | 104.10 | 630 | 103.08 | 455 | 101.58 | 224 | 101.31 | 186 | 102.54 | 368 |
| 22 | 101.75 | 249 | 101.75 | 249 | 103.21 | 388 | 104.46 | 485 | 103.67 | 309 | 109.90 | 3140 | 108.29 | 1710 | 104.02 | 615 | 102.90 | 426 | 101.58 | 224 | 101.33 | 189 | 102.69 | 392 |
| 23 | 101.83 | 261 | 101.83 | 261 | 103.58 | 442 | 104.27 | 625 | 103.50 | 283 | 110.50 | 3740 | 108.19 | 1670 | 103.88 | 590 | 102.75 | 402 | 101.58 | 224 | 101.33 | 189 | 102.35 | 339 |
| 24 | 101.83 | 261 | 101.83 | 261 | 103.67 | 453 | 104.17 | 434 | 103.62 | 299 | 111.19 | 4430 | 107.96 | 1580 | 103.83 | 580 | 102.73 | 399 | 101.52 | 216 | 101.31 | 186 | 102.27 | 328 |
| 25 | 101.83 | 261 | 102.00 | 287 | 103.77 | 466 | 104.25 | 444 | 103.50 | 279 | 110.92 | 4160 | 107.79 | 1510 | 103.83 | 580 | 102.62 | 381 | 101.50 | 213 | 101.33 | 189 | 102.17 | 313 |
| 26 | 101.83 | 261 | 102.00 | 287 | 103.83 | 471 | 104.56 | 490 | 103.52 | 287 | 111.00 | 4240 | 107.44 | 1370 | 103.73 | 565 | 102.25 | 324 | 101.42 | 202 | 101.33 | 189 | 102.23 | 321 |
| 27 | 103.50 | 525 | 102.00 | 287 | 103.96 | 487 | 104.58 | 492 | 103.75 | 386 | 110.81 | 4050 | 107.25 | 1340 | 103.71 | 560 | 101.79 | 255 | 101.52 | 216 | 101.33 | 189 | 101.24 | 323 |
| 28 | 103.50 | 525 | 102.08 | 299 | 104.46 | 570 | 104.38 | 456 | 105.31 | 690 | 110.67 | 3910 | 107.25 | 1340 | 103.92 | 600 | 101.69 | 240 | 101.50 | 213 | 101.40 | 199 | 102.25 | 324 |
| 29 | 103.50 | 525 | 102.08 | 299 | 104.62 | 595 | 104.44 | 464 | 105.92 | 850 | 110.42 | 3660 | 107.08 | 1290 | 103.75 | 565 | 101.67 | 238 | 101.48 | 211 | 101.52 | 216 | 102.25 | 324 |
| 30 | 103.50 | 525 | 102.00 | 287 | 104.67 | 600 | ..... | .... | 106.50 | 1030 | 110.12 | 3360 | 107.08 | 1290 | 103.69 | 555 | 101.67 | 238 | 101.44 | 205 | 101.54 | 219 | 102.17 | 313 |
| 31 | ..... | .... | 102.00 | 287 | 104.92 | 635 | ..... | .... | 106.83 | 1160 | ..... | .... | 107.12 | 1300 | .... | .... | 101.67 | 238 | 101.40 | 199 | ..... | .... | 102.17 | 313 |

## Monthly Discharge of Madawaska River at Madawaska for 1915-6

Drainage area 800 square miles

| Month. | Discharge in Second-feet. | | | Discharge in Second-feet. per square mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 525 | 237 | 287 | .66 | .30 | .36 | .40 |
| December | 525 | 213 | 285 | .66 | .27 | .36 | .42 |
| January .. (1916) | 635 | 276 | 371 | .79 | .34 | .46 | .53 |
| February | 770 | 434 | 581 | .96 | .54 | .73 | .79 |
| March | 1,160 | 279 | 425 | 1.45 | .35 | .53 | .61 |
| April | 4,430 | 915 | 2,333 | 5.54 | 1.14 | 2.92 | 3.26 |
| May | 3,280 | 1,290 | 1,985 | 4.10 | 1.61 | 2.48 | 2.86 |
| June | 1,220 | 555 | 784 | 1.52 | .69 | .98 | 1.09 |
| July | 630 | 238 | 437 | .78 | .30 | .55 | .63 |
| August | 253 | 199 | 228 | .32 | .25 | .29 | .33 |
| September | 269 | 184 | 205 | .34 | .23 | .26 | .29 |
| October | 392 | 164 | 242 | .49 | .20 | .30 | .35 |
| The year | 4,430 | 164 | 679 | 5.54 | .20 | .85 | 11.57 |

## Mississippi River at Ferguson's Falls

Location—At the highway on the road through the Village of Ferguson's Falls, near lots 16 and 17, concession 12, Township of Drummond, County of Lanark.

Records Available—Discharge measurements from July, 1915, and gauge readings from July 13, 1915.

Drainage Area—1,042 square miles.

Gauge—0 to 6 feet of standard gauge plates secured to the inner face of the first pier from the south end of the bridge and near the downstream corner of the pier.

Channel and Control—Channel is straight for 300 feet above and ½ mile below the gauging station. The banks are not liable to overflow. There are 7 channels, formed by the piers of the bridge. The present control is a short distance below the section, and ice action there will affect the discharge relation at low winter stages, but this will not be the point of control for high-water stages. At certain stages measurements are made 1,500 feet below bridge.

Winter Flow—Discharge relation will be affected by ice.

Regulation—The river is regulated throughout its length by power and storage dams, as well as dams in connection with the timber industry.

Accuracy—Open flow relation will be good.

Observer—A. M. Sheppard, Ferguson's Falls.

### Discharge Measurements of Mississippi River at Ferguson's Falls in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 9.... | West, C. W ..... | 187 | 233 | 1.74 | 101.25 | 406 | ..... |
| Dec. 1.... | " ..... | 189 | 255 | 1.97 | 101.40 | 502 | ..... |
| 1916 | | | | | | | |
| Jan. 11.... | " ..... | 168 | 248 | 2.00 | 101.50 | 496 (a) | ..... |
| Feb. 8.... | McLennan, C. C.. | 198 | 442 | 3.58 | 102.29 | 1,581 (b) | ..... |
| Apr. 12.... | " .. | 211 | 772 | 5.93 | 103.88 | 4,579 | ..... |
| May 25.... | " .. | 211 | 693 | 5.56 | 103.46 | 3,857 | ..... |
| June 20.... | " .. | 211 | 733 | 5.77 | 103.71 | 4,225 | ..... |
| Sept. 28.... | " .. | 210 | 195 | 1.59 | 101.12 | 310 (c) | ..... |
| " 28.... | " .. | 172 | 201 | 1.68 | 101.14 | 339 | ..... |

(a) Ice above section and at piers.
(b) Ice covered above and below section.
(c) Metering taken 600 ft. below regular section.

## Daily Gauge Height and Discharge of Mississippi River at Ferguson's Falls for 1915-6

Drainage Area, 1,042 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 101.27 | 419 | 101.39 | 510 | 101.35 | 478 | 102.25 | 1380 | 101.81 | 555 | 103.12 | 3150 | 104.10 | 4980 | 103.10 | 3110 | 103.19 | 3270 | 101.83 | 945 | 101.25 | 405 | 101.13 | 328 |
| 2 | 101.28 | 426 | 101.39 | 510 | 101.38 | 500 | 102.45 | 1740 | 101.78 | 630 | 103.50 | 3860 | 104.03 | 4850 | 103.08 | 3070 | 103.13 | 3160 | 101.81 | 920 | 101.25 | 405 | 101.10 | 310 |
| 3 | 101.27 | 419 | 101.38 | 500 | 101.38 | 500 | 102.49 | 1830 | 101.80 | 565 | 103.83 | 4480 | 104.00 | 4790 | 103.05 | 3020 | 103.11 | 3130 | 101.78 | 890 | 101.25 | 405 | 101.08 | 298 |
| 4 | 101.26 | 412 | 101.35 | 478 | 101.42 | 530 | 102.50 | 1850 | 101.78 | 485 | 104.10 | 4980 | 103.97 | 4740 | 103.02 | 2960 | 103.08 | 3070 | 101.75 | 855 | 101.25 | 405 | 101.08 | 298 |
| 5 | 101.24 | 398 | 101.35 | 478 | 101.43 | 540 | 102.46 | 1750 | 101.76 | 470 | 104.25 | 5270 | 103.88 | 4570 | 102.97 | 2860 | 103.08 | 3070 | 101.72 | 820 | 101.25 | 405 | 101.08 | 298 |
| 6 | 101.25 | 405 | 101.34 | 470 | 101.42 | 530 | 102.41 | 1660 | 101.79 | 492 | 104.29 | 5340 | 103.83 | 4480 | 102.93 | 2790 | 103.06 | 3030 | 101.68 | 780 | 101.25 | 405 | 101.08 | 298 |
| 7 | 101.25 | 405 | 101.33 | 462 | 101.42 | 492 | 102.35 | 1560 | 101.77 | 470 | 104.23 | 5230 | 103.78 | 4380 | 102.85 | 2630 | 102.99 | 2900 | 101.67 | 770 | 101.26 | 410 | 101.08 | 298 |
| 8 | 101.23 | 391 | 101.33 | 462 | 101.42 | 470 | 102.33 | 1520 | 101.75 | 455 | 104.17 | 5110 | 103.67 | 4170 | 102.83 | 2600 | 102.95 | 2820 | 101.67 | 770 | 101.32 | 455 | 101.06 | 286 |
| 9 | 101.23 | 391 | 101.35 | 478 | 101.42 | 450 | 102.31 | 1470 | 101.75 | 448 | 104.06 | 4900 | 103.52 | 3900 | 102.83 | 2600 | 102.93 | 2790 | 101.67 | 770 | 101.36 | 485 | 101.07 | 292 |
| 10 | 101.23 | 391 | 101.48 | 585 | 101.45 | 462 | 102.33 | 1410 | 101.75 | 419 | 103.98 | 4750 | 102.48 | 3820 | 102.83 | 2600 | 102.83 | 2600 | 101.66 | 760 | 101.38 | 500 | 101.11 | 316 |
| 11 | 101.23 | 391 | 101.38 | 500 | 101.49 | 462 | 102.21 | 1300 | 101.78 | 426 | 103.94 | 4680 | 102.38 | 3630 | 102.86 | 2650 | 102.73 | 2420 | 101.62 | 720 | 101.33 | 472 | 101.13 | 328 |
| 12 | 101.20 | 370 | 101.32 | 455 | 101.49 | 478 | 102.18 | 1230 | 101.76 | 398 | 103.88 | 4570 | 102.27 | 3420 | 102.94 | 2810 | 102.65 | 2270 | 101.59 | 690 | 101.30 | 440 | 101.18 | 358 |
| 13 | 101.21 | 377 | 101.29 | 433 | 101.54 | 510 | 102.18 | 1230 | 101.75 | 426 | 103.94 | 4680 | 102.15 | 3200 | 102.98 | 2890 | 102.54 | 2060 | 101.57 | 670 | 101.26 | 412 | 101.20 | 370 |
| 14 | 101.20 | 370 | 101.31 | 448 | 101.57 | 530 | 102.19 | 1290 | 101.75 | 455 | 104.04 | 4870 | 102.08 | 3070 | 102.98 | 2890 | 102.44 | 1870 | 101.54 | 640 | 101.24 | 398 | 101.21 | 377 |
| 15 | 101.20 | 370 | 101.38 | 500 | 101.58 | 550 | 102.11 | 1140 | 101.78 | 500 | 104.15 | 5080 | 103.00 | 2920 | 102.98 | 2890 | 102.39 | 1770 | 101.51 | 610 | 101.25 | 405 | 101.21 | 377 |
| 16 | 101.21 | 377 | 101.33 | 462 | 101.58 | 560 | 102.06 | 1070 | 101.76 | 515 | 104.27 | 5300 | 102.96 | 2840 | 103.00 | 2920 | 102.34 | 1680 | 101.47 | 575 | 101.22 | 384 | 101.23 | 391 |
| 17 | 101.21 | 377 | 101.31 | 448 | 101.61 | 585 | 101.96 | 935 | 101.78 | 585 | 104.35 | 5450 | 103.12 | 3150 | 103.10 | 3110 | 102.32 | 1650 | 101.43 | 540 | 101.18 | 358 | 101.33 | 462 |
| 18 | 101.19 | 364 | 101.33 | 462 | 101.63 | 620 | 101.92 | 890 | 101.80 | 600 | 104.45 | 5630 | 103.29 | 3460 | 103.26 | 3400 | 102.28 | 1570 | 101.40 | 515 | 101.17 | 352 | 101.28 | 426 |
| 19 | 101.21 | 377 | 101.32 | 455 | 101.67 | 640 | 101.93 | 910 | 101.78 | 620 | 104.52 | 5770 | 103.52 | 3900 | 103.46 | 3780 | 102.26 | 1540 | 101.32 | 455 | 101.17 | 352 | 101.25 | 405 |
| 20 | 101.29 | 433 | 101.29 | 433 | 101.66 | 650 | 101.97 | 935 | 101.81 | 660 | 104.54 | 5810 | 103.65 | 4130 | 103.66 | 4150 | 102.21 | 1460 | 101.28 | 425 | 101.17 | 352 | 101.30 | 440 |
| 21 | 101.34 | 470 | 101.33 | 462 | 101.67 | 650 | 101.98 | 945 | 101.79 | 660 | 104.52 | 5770 | 103.71 | 4250 | 103.80 | 4420 | 102.16 | 1380 | 101.25 | 405 | 101.17 | 352 | 101.31 | 448 |
| 22 | 101.33 | 462 | 101.31 | 448 | 101.78 | 770 | 101.90 | 820 | 101.79 | 720 | 104.48 | 5690 | 103.71 | 4250 | 103.91 | 4630 | 102.12 | 1320 | 101.25 | 405 | 101.17 | 352 | 101.31 | 448 |
| 23 | 101.33 | 462 | 101.30 | 440 | 101.85 | 845 | 101.83 | 750 | 101.84 | 780 | 104.46 | 5650 | 103.65 | 4130 | 103.92 | 4650 | 102.09 | 1280 | 101.25 | 405 | 101.15 | 340 | 101.31 | 448 |
| 24 | 101.33 | 462 | 101.29 | 433 | 101.88 | 865 | 101.83 | 740 | 101.83 | 810 | 104.46 | 5650 | 103.56 | 3970 | 103.90 | 4610 | 102.06 | 1230 | 101.25 | 405 | 101.15 | 340 | 101.30 | 440 |
| 25 | 101.33 | 462 | 101.32 | 455 | 101.90 | 910 | 101.80 | 700 | 101.83 | 875 | 104.46 | 5650 | 103.46 | 3780 | 103.79 | 4400 | 102.03 | 1190 | 101.25 | 405 | 101.15 | 340 | 101.26 | 412 |
| 26 | 101.35 | 478 | 101.33 | 462 | 101.96 | 995 | 101.79 | 585 | 101.83 | 890 | 104.42 | 5580 | 103.29 | 3460 | 103.64 | 4120 | 102.00 | 1150 | 101.25 | 405 | 101.15 | 340 | 101.30 | 440 |
| 27 | 101.38 | 500 | 101.33 | 462 | 102.02 | 1070 | 101.80 | 590 | 101.89 | 995 | 104.40 | 5540 | 102.20 | 3290 | 103.54 | 3940 | 101.98 | 1130 | 101.25 | 405 | 101.14 | 334 | 101.26 | 412 |
| 28 | 101.36 | 485 | 101.34 | 470 | 102.10 | 1160 | 101.83 | 630 | 101.94 | 1080 | 104.35 | 5450 | 103.16 | 3220 | 103.49 | 3820 | 101.97 | 1110 | 101.25 | 405 | 101.12 | 322 | 101.25 | 405 |
| 29 | 101.36 | 485 | 101.33 | 462 | 102.17 | 1250 | 101.83 | 610 | 102.09 | 1280 | 104.27 | 5300 | 103.11 | 3130 | 103.34 | 3560 | 101.93 | 1070 | 101.25 | 405 | 101.17 | 352 | 101.22 | 384 |
| 30 | 101.41 | 525 | 101.34 | 470 | 102.17 | 1260 | ..... | ..... | 102.40 | 1790 | 104.19 | 5160 | 103.09 | 2990 | 103.27 | 3420 | 101.89 | 1020 | 101.25 | 405 | 101.16 | 346 | 101.20 | 370 |
| 31 | ..... | .... | 101.35 | 478 | 102.19 | 1300 | ..... | ..... | 102.75 | 2450 | ..... | .... | 103.12 | 3150 | 103.27 | .... | 101.84 | 960 | 101.25 | 405 | ..... | ..... | 101.17 | 352 |

## Monthly Discharge of Mississippi River at Ferguson's Falls for 1915-6

Drainage Area 1,042 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November.(1915) | 525 | 364 | 422 | .50 | .35 | .40 | .45 |
| December " | 585 | 433 | 470 | .56 | .42 | .45 | .52 |
| January...(1916) | 1,300 | 455 | 697 | 1.25 | .44 | .67 | .77 |
| February..... | 1,850 | 585 | 1,154 | 1.78 | .56 | 1.11 | 1.20 |
| March..... | 2,450 | 398 | 726 | 2.35 | .38 | .70 | .81 |
| April..... | 5,810 | 3,150 | 5,145 | 5.58 | 3.62 | 4.94 | 5.51 |
| May..... | 4,980 | 2,840 | 3,807 | 4.78 | 2.73 | 3.65 | 4.21 |
| June ..... | 4,650 | 2,600 | 3,377 | 4.46 | 2.50 | 3.24 | 3.61 |
| July ..... | 3,270 | 960 | 1,967 | 3.14 | .92 | 1.89 | 2.18 |
| August..... | 945 | 405 | 599 | .91 | .39 | .57 | .66 |
| September..... | 500 | 322 | 387 | .48 | .31 | .37 | .41 |
| October..... | 462 | 286 | 371 | .44 | .27 | .36 | .42 |
| The year ..... | 5,810 | 286 | 1,588 | 5.58 | .27 | 1.52 | 20.69 |

## Mississippi River at Galetta

Location—In the Village of Galetta, Township of Fitzroy, County of Carleton, about one hundred feet above, and parallel to the highway bridge over the river. It is only a few hundred yards below the dam and power house of the Galetta Power & Milling Company.

Records Available—Discharge measurements from June, 1915, and gauge readings twice daily from June 24, 1915.

Drainage Area—1,456 square miles.

Gauge—0 to 9 feet of standard gauge plates secured to the left abutment of the highway bridge. High stages measured by rule from gauge.

Channel and Control—Channel is straight for 200 feet above and below the section to a little rapid. The river bed is composed of gravel and stones, with solid rock on the right bank and gravel on the left bank. The point of control is through a solid rock formation a hundred and fifty yards below the section.

Discharge Measurements—Made by wading and from a boat held up to tag line by cable. Extreme high-water measurements have to be made from the highway bridge.

Winter Flow—The winter conditions here will not seriously affect the gauge height and discharge relations.

Regulation—The river is subject to regulation throughout its entire length. In the headwaters are storage dams for power purposes, as well as timber dams for driving purposes.

Accuracy—Owing to the wet season the wasted water has been considerably more than would usually be the case. This season's relations between gauge height and discharge are likely better than those of the ordinary year.

Co-operation—Discharge measurements made at the bridge by the Department of Public Works of Canada.

Observer—J. P. Coyne, Galetta.

### Discharge Measurements of Mississippi River at Galetta in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 24.... | West, C. W. .... | 88 | 140 | 3.44 | 244.47 | 481 | ..... |
| Dec. 9.... | " .... | 90 | 148 | 3.42 | 244.47 | 508 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 24.... | Campbell, L. L. . | 60 | 196 | 4.60 | 245.49 | 902 (b) | ..... |
| Feb. 21.... | McLennan, C. C. | 96 | 300 | 3.45 | 246.05 | 1,034 (c) | ..... |
| Mar. 20.... | " | 100 | 222 | 3.00 | 245.24 | 667 (d) | ..... |
| April 19.... | Campbell, L. L. . | ..... | ..... | ..... | 252.07 | 5,656 | ..... |
| May 22.... | " | ..... | ..... | ..... | 250.82 | 3,961 | ..... |
| June 14.... | McLennan, C. C. | 102 | 902 | 2.62 | 248.82 | 2,363 | ..... |
| July 10.... | " | 101 | 894 | 3.26 | 248.86 | 2,333 | ..... |
| Sept. 7.... | " | 68 | 131 | 3.34 | 244.28 | 437 | ..... |
| Oct. 24.... | Campbell, L. L. . | 75 | 150 | 3.47 | 244.55 | 519 | ..... |

(a) Ice at gauge.
(b) Ice at left edge of section.
(c) Ice at edges of section.
(d) Ice at edges of section and control.

# Daily Gauge Height and Discharge of Mississippi River at Galetta for 1915-6

Drainage Area, 1,456 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 244.15 | 391 | 244.61 | 565 | 244.40 | 486 | 247.90 | 1840 | 245.99 | 915 | 251.11 | 4380 | 251.32 | 4670 | 249.61 | 2850 | 249.53 | 2790 | 245.49 | 900 | 244.11 | 376 | 243.99 | 330 |
| 2 | 244.26 | 433 | 244.53 | 535 | 244.49 | 521 | 248.15 | 1960 | 245.76 | 830 | 252.15 | 5780 | 251.24 | 4560 | 249.53 | 2790 | 249.57 | 2820 | 245.59 | 935 | 244.15 | 391 | 243.92 | 504 |
| 3 | 244.24 | 425 | 244.49 | 520 | 244.36 | 471 | 248.01 | 1870 | 245.78 | 840 | 251.86 | 5390 | 251.15 | 4440 | 249.49 | 2760 | 249.86 | 3040 | 245.53 | 915 | 244.07 | 361 | 244.03 | 345 |
| 4 | 244.20 | 410 | 244.49 | 520 | 244.45 | 506 | 247.90 | 1800 | 245.82 | 850 | 251.65 | 5110 | 251.03 | 4270 | 249.36 | 2670 | 249.74 | 2940 | 245.57 | 930 | 244.07 | 361 | 243.90 | 296 |
| 5 | 244.15 | 391 | 244.42 | 495 | 244.61 | 565 | 247.90 | 1780 | 245.70 | 805 | 251.53 | 4950 | 250.90 | 4090 | 249.24 | 2590 | 249.44 | 2730 | 245.53 | 915 | 244.20 | 410 | 243.90 | 296 |
| 6 | 244.15 | 391 | 244.30 | 448 | 244.82 | 650 | 247.70 | 1730 | 245.53 | 740 | 251.99 | 5570 | 250.82 | 3980 | 249.07 | 2480 | 249.32 | 2640 | 245.28 | 825 | 244.20 | 410 | 243.95 | 315 |
| 7 | 244.15 | 391 | 244.44 | 500 | 244.80 | 640 | 247.63 | 1670 | 245.65 | 790 | 251.57 | 5000 | 250.61 | 3720 | 248.99 | 2430 | 249.24 | 2590 | 244.86 | 660 | 244.24 | 425 | 243.90 | 296 |
| 8 | 244.05 | 353 | 244.53 | 535 | 244.90 | 675 | 247.61 | 1640 | 245.74 | 840 | 251.90 | 5450 | 250.49 | 3600 | 248.94 | 2460 | 249.11 | 2510 | 245.07 | 740 | 244.36 | 471 | 243.74 | 235 |
| 9 | 244.11 | 376 | 244.49 | 520 | 244.82 | 650 | 247.40 | 1510 | 245.78 | 860 | 251.90 | 5450 | 250.36 | 3470 | 249.07 | 2480 | 248.94 | 2400 | 245.24 | 805 | 244.28 | 440 | 243.78 | 250 |
| 10 | 244.11 | 376 | 244.30 | 448 | 244.54 | 540 | 247.15 | 1440 | 245.70 | 820 | 252.10 | 5720 | 250.24 | 3360 | 248.94 | 2400 | 248.82 | 2330 | 245.28 | 825 | 244.20 | 410 | 243.82 | 265 |
| 11 | 244.20 | 410 | 244.42 | 495 | 244.65 | 580 | 246.94 | 1370 | 245.65 | 805 | 252.53 | 6290 | 250.32 | 3430 | 248.82 | 2330 | 248.74 | 2280 | 245.22 | 800 | 244.24 | 425 | 243.94 | 311 |
| 12 | 244.13 | 383 | 244.36 | 471 | 244.57 | 550 | 247.11 | 1430 | 245.70 | 820 | 252.86 | 6730 | 250.15 | 3280 | 248.82 | 2350 | 248.61 | 2210 | 245.28 | 825 | 244.36 | 471 | 243.94 | 311 |
| 13 | 244.11 | 376 | 244.24 | 425 | 244.65 | 580 | 246.82 | 1280 | 245.49 | 745 | 252.57 | 6350 | 249.89 | 3060 | 248.80 | 2320 | 248.44 | 2110 | 245.03 | 725 | 244.36 | 471 | 244.03 | 345 |
| 14 | 244.09 | 368 | 244.44 | 500 | 245.07 | 740 | 246.55 | 1140 | 245.59 | 780 | 252.32 | 6010 | 249.70 | 2910 | 248.78 | 2310 | 248.11 | 1940 | 244.90 | 675 | 244.42 | 494 | 244.03 | 345 |
| 15 | 244.03 | 345 | 244.49 | 520 | 244.86 | 660 | 246.74 | 1220 | 245.57 | 775 | 252.11 | 5730 | 249.49 | 2760 | 248.80 | 2320 | 247.99 | 1880 | 244.90 | 675 | 244.36 | 471 | 243.99 | 330 |
| 16 | 244.07 | 361 | 244.44 | 500 | 244.74 | 620 | 246.74 | 1220 | 245.61 | 790 | 252.20 | 5850 | 249.44 | 2730 | 249.03 | 2460 | 247.90 | 1840 | 244.90 | 675 | 244.40 | 486 | 244.13 | 383 |
| 17 | 244.15 | 391 | 244.42 | 495 | 244.78 | 630 | 246.49 | 1160 | 245.59 | 780 | 252.49 | 6240 | 250.76 | 3900 | 249.74 | 2940 | 247.94 | 1860 | 244.82 | 650 | 244.36 | 471 | 244.19 | 406 |
| 18 | 244.13 | 383 | 244.44 | 500 | 244.94 | 690 | 246.36 | 1050 | 245.51 | 745 | 252.40 | 6120 | 251.49 | 4900 | 249.61 | 2850 | 247.70 | 1750 | 244.82 | 650 | 244.28 | 440 | 244.28 | 440 |
| 19 | 244.20 | 410 | 244.40 | 486 | 244.84 | 655 | 246.07 | 940 | 245.40 | 705 | 252.07 | 5680 | 251.11 | 4380 | 249.49 | 2760 | 247.53 | 1680 | 244.74 | 615 | 244.20 | 410 | 244.40 | 486 |
| 20 | 244.40 | 486 | 244.30 | 448 | 244.90 | 675 | 245.90 | 875 | 245.28 | 670 | 251.94 | 5500 | 250.74 | 3870 | 249.57 | 2820 | 246.61 | 1320 | 244.65 | 580 | 244.15 | 391 | 244.53 | 535 |
| 21 | 244.59 | 555 | 244.40 | 486 | 244.90 | 675 | 246.36 | 1040 | 245.44 | 735 | 251.90 | 5450 | 250.53 | 3640 | 249.70 | 2910 | 246.40 | 1250 | 244.57 | 550 | 244.09 | 368 | 244.70 | 600 |
| 22 | 244.44 | 500 | 244.40 | 486 | 245.07 | 740 | 246.32 | 1020 | 245.44 | 755 | 251.86 | 5390 | 250.49 | 3600 | 249.78 | 2970 | 246.36 | 1230 | 244.53 | 535 | 244.20 | 410 | 244.74 | 615 |
| 23 | 244.42 | 495 | 244.42 | 495 | 245.53 | 915 | 246.20 | 980 | 245.42 | 760 | 252.07 | 5680 | 250.57 | 3680 | 249.94 | 3100 | 246.40 | 1250 | 244.11 | 376 | 244.15 | 391 | 244.49 | 520 |
| 24 | 244.42 | 495 | 244.40 | 486 | 245.42 | 875 | 245.99 | 900 | 245.40 | 780 | 252.15 | 5780 | 250.49 | 3600 | 250.03 | 3170 | 246.40 | 1250 | 244.15 | 391 | 244.03 | 345 | 244.49 | 520 |
| 25 | 244.36 | 471 | 244.40 | 486 | 245.82 | 1030 | 246.03 | 930 | 245.38 | 800 | 252.03 | 5620 | 250.32 | 3430 | 250.15 | 3280 | 246.44 | 1260 | 244.34 | 462 | 243.99 | 330 | 244.53 | 535 |
| 26 | 244.38 | 478 | 244.50 | 525 | 246.15 | 1150 | 246.05 | 935 | 245.38 | 820 | 251.86 | 5390 | 250.11 | 3240 | 250.15 | 3280 | 246.40 | 1250 | 244.26 | 433 | 243.90 | 296 | 244.61 | 565 |
| 27 | 244.38 | 478 | 244.49 | 520 | 246.29 | 1200 | 245.86 | 865 | 245.32 | 835 | 251.86 | 5390 | 249.99 | 3140 | 250.07 | 3210 | 246.24 | 1190 | 244.07 | 361 | 243.90 | 296 | 244.65 | 580 |
| 28 | 244.38 | 478 | 244.57 | 550 | 246.74 | 1380 | 245.99 | 905 | 246.07 | 1120 | 251.70 | 5180 | 249.90 | 3070 | 249.99 | 3140 | 246.09 | 1150 | 244.11 | 376 | 243.97 | 323 | 244.42 | 494 |
| 29 | 244.38 | 478 | 244.59 | 555 | 246.82 | 1410 | 246.05 | 935 | 246.76 | 1380 | 251.53 | 4950 | 249.80 | 3010 | 249.82 | 3020 | 246.07 | 1120 | 244.09 | 368 | 244.05 | 353 | 244.18 | 402 |
| 30 | 244.57 | 550 | 244.57 | 550 | 246.82 | 1410 | ..... | ..... | 249.25 | 2590 | 251.40 | 4770 | 249.78 | 2970 | 249.70 | 2910 | 245.99 | 1090 | 244.07 | 361 | 244.07 | 361 | 244.03 | 345 |
| 31 | ..... | .... | 244.57 | 550 | 247.05 | 1490 | ..... | ..... | 250.57 | 3680 | ..... | ..... | 249.78 | 2970 | ..... | .... | 245.61 | 940 | 244.01 | 358 | ..... | ..... | 243.99 | 330 |

## Monthly Discharge of Mississippi River at Galetta for 1915-6

Drainage Area, 1,456 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November .(1915) | 555 | 345 | 428 | .38 | .24 | .29 | .32 |
| December. " | 565 | 425 | 504 | .39 | .29 | .35 | .40 |
| January ..(1916) | 1,490 | 471 | 786 | 1.02 | .32 | .54 | .62 |
| February ..... | 1,960 | 865 | 1,291 | 1.35 | .59 | .89 | .96 |
| March..... | 3,680 | 670 | 973 | 2.53 | .46 | .67 | .76 |
| April..... | 6,730 | 4,380 | 5,563 | 4.62 | 3.01 | 3.82 | 4.26 |
| May..... | 4,900 | 2,730 | 3,604 | 3.37 | 1.88 | 2.48 | 2.86 |
| June..... | 3,280 | 2,310 | 2,743 | 2.25 | 1.59 | 1.88 | 2.10 |
| July..... | 3,040 | 940 | 1,891 | 2.09 | .65 | 1.30 | 1.50 |
| August ..... | 935 | 338 | 641 | .64 | .23 | .44 | .51 |
| September..... | 494 | 296 | 402 | .34 | .20 | .28 | .31 |
| October..... | 615 | 235 | 398 | .42 | .16 | .27 | .31 |
| The year ..... | 6,730 | 235 | 1,596 | 4.62 | .16 | 1.10 | 14.97 |

## Mississippi River near Snow Road

Location—At the highway bridge about two miles below the Village of Snow Road, Township of Sherbrooke, County of Lanark.

Records Available—Discharge measurements from July, 1915, and gauge readings on week days since July 30, 1915.

Drainage Area—496 square miles.

Gauge—0 to 6 ft. of standard gauge plates secured vertically to the downstream side of the left abutment of the highway bridge. The elevation of the zero on gauge is assumed as 100.00.

Channel and Control—The channel approaches and leaves the section at a slight angle. The banks are high, and are not liable to overflow. The bridge pier forms two channels at the gauging section. Earth, rocks and gravel in the river bed, not shifting. Control for ordinary stages not well defined. At very high water stages the point of control is probably the head of the rapids just above High Falls.

Discharge Measurements—Measurements made from bridge at all stages.

Winter Flow—Discharge relation affected by ice.

Regulation—The power and lumber companies operating on this river have storage dams above this point.

Accuracy—No Sunday readings have been secured by gauge-readers, but the fluctuation in stage is slow. The open-water relation should be good.

Observer—Fred. Jackson, Snow Road.

### Discharge Measurements of Mississippi River near Snow Road in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 23.... | West, C. W..... | 58 | 322 | .90 | 102.10 | 291 | ..... |
| Dec. 16.... | " | 58 | 320 | .99 | 102.02 | 317 (a) | ..... |
| 1916 | | | | | | | |
| Feb. 1.... | Campcell. L. L. . | 58 | 380 | 1.59 | 103.00 | 605 (b) | ..... |
| " 23.... | McLennan, C. C.. | 58 | 309 | 1.21 | 102.58 | 374 (c) | ..... |
| Mar. 21.... | " | 58 | 307 | 1.17 | 102.92 | 361 (c) | ..... |
| Apr. 8.... | " | 58 | 443 | 2.80 | 104.17 | 1,239 | ..... |
| June 28.... | " | 58 | 496 | 3.80 | 105.00 | 1,885 | ..... |
| July 14.... | Campbell, L. L. . | 58 | 426 | 2.35 | 103.75 | 1,000 | ..... |
| Sept. 12.... | " | 58 | 318 | 1.00 | 102.17 | 316 | ..... |
| Oct. 1.... | " | 58 | 300 | .69 | 101.92 | 208 | ..... |

(a) Ice on ponds above and below section.
(b) Ice on ponds above and below section. Section partly ice covered.
(c) Ice measurement.

# Daily Gauge Height and Discharge of Mississippi River near Snow Road for 1915-6

Drainage Area, 446 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 102.08 | 265 | 102.17 | 288 | 102.23 | 302 | 103.00 | 605 | 102.58 | 359 | 104.38 | 1430 | 106.33 | 2720 | 104.08 | 1220 | 104.50 | 1520 | 103.00 | 605 | 102.25 | 307 | ..... | 243 |
| 2 | 102.08 | 265 | 102.19 | 292 | 102.24 | 305 | 103.02 | 600 | 102.58 | 356 | 104.38 | 1460 | 106.25 | 2670 | 104.00 | 1160 | ..... | 1540 | 103.00 | 605 | 102.33 | 329 | 101.96 | 237 |
| 3 | 102.04 | 255 | 102.19 | 292 | 192.25 | 308 | 103.02 | 600 | 102.58 | 356 | 104.75 | 1700 | 106.17 | 2630 | 104.08 | 1220 | 104.58 | 1570 | 103.04 | 625 | ..... | 329 | 101.96 | 237 |
| 4 | 102.02 | 250 | 102.17 | 288 | 102.25 | 308 | 103.00 | 580 | 102.62 | 356 | 104.38 | 1430 | 106.08 | 2560 | ..... | 1190 | 104.67 | 1640 | 103.00 | 605 | 102.33 | 329 | 101.96 | 237 |
| 5 | 102.04 | 255 | ..... | 288 | 102.25 | 308 | 103.83 | 495 | ..... | 353 | 104.17 | 1280 | 105.88 | 2430 | 104.00 | 1160 | 104.58 | 1570 | 102.92 | 560 | 102.33 | 329 | 101.92 | 229 |
| 6 | 102.02 | 250 | 102.17 | 288 | 102.25 | 308 | 103.83 | 486 | 102.58 | 353 | 104.17 | 1280 | 105.75 | 2350 | 104.00 | 1160 | 104.42 | 1460 | ..... | 560 | 102.33 | 329 | 101.92 | 229 |
| 7 | ..... | 247 | 102.17 | 288 | 102,25 | 308 | 103.79 | 459 | 192.58 | 350 | 104.08 | 1220 | ..... | 2240 | 104.00 | 1160 | 104.17 | 1280 | 102.92 | 560 | 102.25 | 307 | 101.92 | 229 |
| 8 | 102.00 | 245 | 102.17 | 288 | 102.25 | 308 | 103.71 | 438 | 102.58 | 350 | 104.17 | 1280 | 105.42 | 2130 | 103.92 | 1110 | 104.52 | 1530 | 102.92 | 560 | 102.25 | 307 | ..... | 279 |
| 9 | 102.00 | 245 | 102.17 | 288 | 102.25 | 308 | 103.71 | 438 | 102.60 | 350 | ..... | | 1380 | 105.17 | 1970 | 104.08 | 1220 | ..... | 1300 | 102.83 | 510 | 102.25 | 307 | 102.33 | 329 |
| 10 | 102.00 | 245 | 102.17 | 288 | 102.33 | 308 | 103.69 | 422 | 102.62 | 350 | 104,33 | 1390 | 105.00 | 1860 | 104.17 | 1280 | 103.83 | 1060 | 102.83 | 510 | ..... | 304 | 102.38 | 344 |
| 11 | 102.00 | 245 | 102.17 | 288 | 102.33 | 308 | 103.69 | 418 | 102.65 | 365 | 104.50 | 1520 | 104.83 | 1750 | ..... | 1350 | 103.79 | 1030 | 102.75 | 472 | 102.21 | 298 | 102.42 | 356 |
| 12 | 102.00 | 245 | 102.17 | 288 | 102.29 | 308 | 103.67 | 410 | 102.65 | 365 | 104.75 | 1700 | 104.75 | 1700 | 104.38 | 1430 | 103.77 | 1020 | 102.75 | 472 | 102.17 | 288 | 102 38 | 344 |
| 13 | 101.92 | 229 | 102.17 | 288 | 102.33 | 308 | ..... | 404 | 162.65 | 365 | 105.25 | 2020 | 104.50 | 1520 | 104 33 | 1390 | 103.77 | 1020 | ..... | 426 | 102.17 | 288 | 102.33 | 329 |
| 14 | ..... | 227 | 102.17 | 288 | 102.33 | 308 | 103.62 | 401 | 102.65 | 365 | 105.50 | 2180 | 104.50 | 1430 | 104.33 | 1390 | 103.77 | 1920 | 102.50 | 380 | 102.17 | 288 | 102.29 | 318 |
| 15 | 101.90 | 225 | 102.15 | 282 | 102.33 | 308 | 103.62 | 395 | 102.62 | 365 | 105.75 | 2350 | 104.25 | 1340 | 104.29 | 1360 | 103.75 | 1010 | 102.50 | 380 | 101.17 | 288 | ..... | 308 |
| 16 | 101.85 | 214 | 102.17 | 288 | ..... | 308 | 103.60 | 389 | 102.62 | 365 | ..... | 2510 | 104.29 | 1360 | 104.33 | 1390 | ..... | 1010 | 102.35 | 335 | 102.17 | 288 | 102.21 | 298 |
| 17 | 101.85 | 214 | 102.17 | 288 | 102.33 | 308 | 103.60 | 386 | 102.75 | 365 | 106.25 | 2670 | 104.33 | 1390 | 105.17 | 1970 | 103.75 | 1010 | 102.25 | 307 | ..... | 289 | 102.21 | 298 |
| 18 | 101.92 | 229 | 102.19 | 292 | 102.38 | 308 | 103.60 | 383 | 102.92 | 365 | 106.42 | 2780 | 104.67 | 1640 | ..... | 2240 | 103.67 | 960 | 102.17 | 288 | 102.18 | 290 | 102.21 | 298 |
| 19 | 102.00 | 245 | ..... | 290 | 102.38 | 335 | 103.60 | 380 | ..... | 365 | 106.58 | 2890 | 104.83 | 1750 | 106.00 | 2510 | 103.58 | 910 | 102.08 | 265 | 102.08 | 265 | 102.21 | 298 |
| 20 | 102.02 | 250 | 102.17 | 288 | 102.38 | 344 | 130.60 | 377 | 103.00 | 359 | 106.33 | 2720 | 104.79 | 1720 | 106.00 | 2510 | 103.54 | 890 | ..... | 277 | 102.08 | 265 | 102.23 | 302 |
| 21 | ..... | 260 | 102.17 | 288 | 102.38 | 344 | 103.58 | 374 | 102.94 | 365 | 106.25 | 2670 | ..... | 1620 | 106.08 | 2560 | 103.50 | 865 | 102.17 | 288 | 102.08 | 265 | 102.25 | 308 |
| 22 | 102.10 | 270 | 102.19 | 292 | 102.50 | 380 | 103.58 | 374 | 102.94 | 368 | 106.25 | 2670 | 104.50 | 1520 | 105.83 | 2400 | 103.50 | 865 | 102.25 | 307 | 102.08 | 265 | ..... | 298 |
| 23 | 102.10 | 270 | 102.19 | 292 | ..... | 389 | 103.56 | 371 | 102.92 | 371 | ..... | 2780 | 104.42 | 1460 | 105.58 | 2240 | ..... | 835 | 102.33 | 329 | 102.08 | 265 | 102.17 | 288 |
| 24 | 102.10 | 270 | 102.21 | 298 | 102.56 | 398 | 103.58 | 374 | 102.92 | 374 | 106.58 | 2890 | 104.42 | 1460 | 105.33 | 2070 | 103.38 | 805 | 102.42 | 356 | ..... | 265 | 102.12 | 275 |
| 25 | 102.10 | 270 | 192.25 | 307 | 102.62 | 418 | 103.58 | 371 | 102.88 | 380 | 106.58 | 2890 | 104.38 | 1430 | ..... | 2020 | 102.33 | 780 | 102.42 | 356 | 102.08 | 265 | 102.08 | 265 |
| 26 | 102.10 | 270 | ..... | 305 | 102.67 | 438 | 103.67 | 365 | ..... | 418 | 106.67 | 2940 | 104.25 | 1340 | 105.17 | 1970 | 103.25 | 740 | 102.42 | 356 | 102.02 | 250 | 102.00 | 245 |
| 27 | 102.13 | 278 | 102.23 | 302 | 102.75 | 472 | ..... | 362 | 102.83 | 464 | 106.67 | 2940 | 104.21 | 1310 | 105.08 | 1910 | 103.25 | 740 | ..... | 350 | 102.00 | 245 | 102.00 | 245 |
| 28 | ..... | 280 | 102.21 | 298 | 102.83 | 510 | ..... | 359 | 102.83 | 510 | 106.58 | 2890 | ..... | 1260 | 105.00 | 1860 | 103.25 | 740 | 102.38 | 344 | 102.00 | 245 | 102.00 | 245 |
| 29 | 102.15 | 282 | 102.19 | 292 | 102.83 | 510 | 103.58 | 359 | 102.85 | 520 | 106.50 | 2840 | 104.08 | 1220 | 104.92 | 1810 | 103.17 | 600 | 102.38 | 344 | 102.02 | 250 | ..... | 237 |
| 30 | 102.17 | 288 | 102.21 | 298 | ..... | 535 | ..... | ... | 102.96 | 580 | ..... | 2780 | 104.17 | 1280 | 104.67 | 1640 | ..... | 625 | 102.33 | 329 | 102.02 | 250 | 101.92 | 229 |
| 31 | ..... | .... | 102.23 | 302 | 102.92 | 560 | ..... | ... | 103.79 | 1030 | ..... | ..... | 104.17 | 1280 | ..... | .... | 103.08 | 650 | 102.33 | 329 | ..... | ..... | 101.92 | 229 |

## Monthly Discharge of Mississippi River near Snow Road for 1915-6

Drainage Area, 446 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 288 | 214 | 253 | .65 | .48 | .57 | .64 |
| December " | 307 | 282 | 292 | .69 | .63 | .65 | .75 |
| January ..(1916) | 560 | 302 | 360 | 1.26 | .68 | .81 | .93 |
| February ..... | 605 | 359 | 427 | 1.36 | .80 | .96 | 1.04 |
| March ..... | 1,030 | 350 | 405 | 2.31 | .78 | .91 | 1.02 |
| April ..... | 2,940 | 1,220 | 2,183 | 6.59 | 2.74 | 4.89 | 5.46 |
| May ..... | 2,720 | 1,220 | 1,712 | 6.10 | 2.74 | 3.84 | 4.43 |
| June..... | 2,560 | 1,110 | 1,663 | 5.74 | 2.49 | 3.73 | 4.16 |
| July ..... | 1,640 | 600 | 1,051 | 3.68 | 1.35 | 2.36 | 2.72 |
| August ..... | 625 | 265 | 419 | 1.40 | .59 | .94 | 1.08 |
| September ..... | 329 | 245 | 286 | .74 | .55 | .64 | .71 |
| October ..... | 356 | 229 | 278 | .80 | .51 | .62 | .71 |
| The year ..... | 2,940 | 214 | 776 | 6.59 | .48 | 1.74 | 23.68 |

## Moira River near Foxboro

**Location**—Three hundred feet above G.T.R. Crossing, and six hundred feet east of Foxboro Station, on the G.T.R.-Belleville, Peterboro Branch. Near Lot 5, Concession VI, Township of Thurlow, County of Hastings.

**Records Available**—Monthly discharge measurements from September, 1915, and gauge readings from October 12, 1915.

**Drainage Area**—1,038 square miles.

**Gauge**—Four points on the bed of the river, about 50 feet above the section have been selected from which the elevation of the water surface is measured twice daily. One of these points is used at a time, according to the stage of the river.

**Channel and Control**—At one side of the river at the section are boulders and rocks, but the rest of the section is smooth, solid rock, liable to no movement at all. The control is only a few feet below the section and is not likely to freeze over in winter except for short periods of time.

**Discharge Measurements**—At ordinary stages the measurements are made by wading, at tag line.

**Winter Flow**—The relation of gauge height to discharge will be but slightly affected by ice, but likely in a fairly uniform manner throughout the winter.

**Regulation**—The river above the section has dams in many places besides the regulation for the lumber interest, on different tributary lakes and streams.

**Accuracy**—Open water relation will be good.

**Observer**—C. Stewart, Foxboro P.O.

### Discharge Measurements of Moira River near Foxboro in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 13.... | West, C. W..... | 163 | 192 | 1.13 | 321.95 | 217 | ..... |
| Dec. 4.... | " ..... | 166 | 323 | 2.52 | 322.75 | 816 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 5.... | " ..... | 164 | 273 | 1.75 | 322.46 | 478 (a) | ..... |
| Feb. 12.... | McLennan, C. C.. | 178 | 507 | 2.96 | 323.93 | 1,500 (a) | ..... |
| Mar. 10.... | " .. | 162 | 297 | 2.25 | 322.68 | 669 | ..... |
| May 8.... | " .. | 181 | 505 | 4.10 | 324.05 | 2,073 | ..... |
| June 27.... | Campbell, L. L.. | 190 | 673 | 5.87 | 325.17 | 3,952 | ..... |
| July 26.... | " .. | 164 | 268 | 1.80 | 322.47 | 482 | ..... |
| Sept. 19.... | " .. | 120 | 126 | .95 | 321.66 | 121 | ..... |
| Oct. 12.... | " .. | 115 | 107 | .67 | 321.50 | 72 | ..... |

(a) Ice covered above section.

## Daily Gauge Height and Discharge of Moira River near Foxboro for 1915-6

Drainage Area, 1,038 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 322.01 | 264 | 322.89 | 730 | 322.44 | 464 | 325.32 | 4200 | 322.84 | 695 | 326.69 | 6510 | 325.02 | 3700 | 324.37 | 2610 | 324.50 | 2830 | 322.27 | 382 | 321.79 | 174 | 321.60 | 105 |
| 2 | 321.97 | 246 | 322.87 | 720 | 322.44 | 464 | 325.55 | 4560 | 322.84 | 695 | 327.09 | 7180 | 324.90 | 3500 | 324.39 | 2640 | 324.35 | 2570 | 322.20 | 349 | 321.79 | 174 | 321.60 | 105 |
| 3 | 321.99 | 254 | 322.84 | 700 | 322.46 | 475 | 325.54 | 4580 | 322.83 | 690 | 327.34 | 7610 | 324.82 | 3360 | 324.52 | 2860 | 324.26 | 2430 | 322.18 | 340 | 321.77 | 167 | 321.58 | 98 |
| 4 | 321.99 | 254 | 322.77 | 655 | 322.42 | 454 | 325.37 | 4290 | 322.77 | 655 | 327.59 | 8020 | 324.77 | 3290 | 324.60 | 3000 | 324.21 | 2350 | 322.16 | 331 | 321.76 | 164 | 321.56 | 92 |
| 5 | 322.01 | 264 | 322.73 | 630 | 322.48 | 485 | 325.20 | 4010 | 322.74 | 635 | 327.79 | 8360 | 324.74 | 3240 | 324.60 | 3000 | 324.13 | 2210 | 322.10 | 304 | 321.76 | 164 | 321.54 | 85 |
| 6 | 322.00 | 259 | 322.69 | 605 | 322.54 | 519 | 324.98 | 3630 | 322.67 | 590 | 327.79 | 8360 | 324.66 | 3100 | 324.58 | 2970 | 324.04 | 2060 | 322.10 | 304 | 321.74 | 163 | 321.52 | 79 |
| 7 | 321.98 | 251 | 322.65 | 580 | 322.56 | 530 | 324.75 | 3250 | 322.68 | 600 | 327.49 | 7850 | 324.59 | 2980 | 324.51 | 2850 | 323.89 | 1820 | 322.08 | 295 | 321.73 | 151 | 321.54 | 85 |
| 8 | 321.98 | 251 | 322.61 | 555 | 322.56 | 530 | 324.43 | 2710 | 322.70 | 610 | 327.04 | 7100 | 324.47 | 2780 | 324.45 | 2740 | 323.80 | 1690 | 322.16 | 331 | 321.79 | 174 | 321.54 | 85 |
| 9 | 321.97 | 246 | 322.59 | 545 | 322.54 | 519 | 324.36 | 2590 | 322.66 | 585 | 326.29 | 5830 | 324.36 | 2590 | 324.39 | 2640 | 323.62 | 1450 | 322.16 | 331 | 321.78 | 170 | 321.55 | 88 |
| 10 | 321.98 | 251 | 322.48 | 485 | 322.59 | 545 | 324.18 | 2290 | 322.66 | 585 | 326.10 | 5540 | 324.25 | 2410 | 324.39 | 2640 | 323.48 | 1299 | 322.14 | 322 | 321.74 | 163 | 321.54 | 85 |
| 11 | 321.98 | 251 | 322.48 | 485 | 322.62 | 560 | 324.00 | 1990 | 322.65 | 580 | 325.90 | 5180 | 324.14 | 2230 | 324.41 | 2680 | 323.58 | 1400 | 322.12 | 313 | 321.73 | 151 | 321.54 | 85 |
| 12 | 321.96 | 242 | 322.44 | 464 | 322.61 | 555 | 323.89 | 1830 | 322.62 | 565 | 325.79 | 4990 | 324.07 | 2110 | 324.48 | 2800 | 323.48 | 1290 | 322.10 | 304 | 321 71 | 144 | 321.54 | 85 |
| 13 | 321.98 | 251 | 322.43 | 459 | 322.73 | 630 | 323.79 | 1680 | 322.63 | 570 | 325.73 | 4900 | 323.98 | 1960 | 324.63 | 3050 | 323.38 | 1180 | 322.08 | 295 | 321.68 | 133 | 321.58 | 98 |
| 14 | 321.97 | 246 | 322.39 | 439 | 322.75 | 640 | 323.73 | 1590 | 322.62 | 565 | 325.78 | 4980 | 323.83 | 1730 | 324.71 | 3190 | 323.29 | 1080 | 322.05 | 281 | 321.68 | 133 | 321.56 | 92 |
| 15 | 321.97 | 246 | 322.66 | 585 | 322.79 | 665 | 323.65 | 1490 | 322.63 | 570 | 326.06 | 5450 | 323.75 | 1620 | 324.70 | 3170 | 323.24 | 1040 | 322.03 | 272 | 321.70 | 140 | 321.54 | 85 |
| 16 | 322.01 | 264 | 322.33 | 410 | 322.83 | 690 | 323.52 | 1330 | 322.60 | 550 | 326.18 | 5660 | 323.64 | 1480 | 324.90 | 3500 | 322.91 | 750 | 321.98 | 250 | 321.68 | 133 | 321.58 | 98 |
| 17 | 321.99 | 254 | 322.31 | 401 | 322.85 | 705 | 323.45 | 1260 | 322.60 | 550 | 326.24 | 5760 | 323.78 | 1660 | 325.52 | 4540 | 322.93 | 765 | 321 97 | 246 | 321.68 | 133 | 321.54 | 85 |
| 18 | 321.99 | 254 | 322.37 | 430 | 322.89 | 730 | 323.39 | 1190 | 322.57 | 535 | 326.27 | 5810 | 323.94 | 1000 | 325.91 | 5200 | 322.85 | 705 | 321.96 | 242 | 321.68 | 133 | 321.55 | 88 |
| 19 | 322.08 | 295 | 322.35 | 420 | 322.96 | 800 | 323.20 | 1000 | 322.59 | 545 | 326.16 | 5620 | 324.15 | 2240 | 326.31 | 5870 | 322.80 | 670 | 321.96 | 242 | 321.66 | 126 | 321.62 | 112 |
| 20 | 322.31 | 401 | 322.37 | 430 | 322.92 | 755 | 323.17 | 960 | 322.58 | 540 | 326.00 | 5350 | 324.26 | 2430 | 326.48 | 6160 | 322.74 | 635 | 321.94 | 233 | 321.60 | 105 | 321.74 | 155 |
| 21 | 322.49 | 490 | 322.39 | 439 | 322.97 | 795 | 323.14 | 935 | 322.57 | 535 | 325.79 | 4990 | 324.34 | 2570 | 326.50 | 6190 | 322.68 | 595 | 321.92 | 225 | 321.62 | 112 | 321.74 | 155 |
| 22 | 322.68 | 600 | 322.36 | 425 | 323.28 | 1080 | 323.13 | 925 | 322.56 | 530 | 325.65 | 4760 | 324.34 | 2570 | 326.39 | 6000 | 322.68 | 595 | 321.92 | 225 | 321.63 | 116 | 321.74 | 155 |
| 23 | 322.84 | 700 | 322.37 | 430 | 323.47 | 1280 | 323.11 | 910 | 322.55 | 525 | 325.69 | 4830 | 324.36 | 2590 | 326.11 | 5540 | 322.59 | 545 | 321.90 | 216 | 321.64 | 119 | 321.72 | 148 |
| 24 | 322.94 | 770 | 322.39 | 439 | 323.55 | 1370 | 323.02 | 835 | 322.54 | 520 | 325.69 | 4830 | 324.33 | 2540 | 325.79 | 4990 | 322.56 | 530 | 321.90 | 216 | 321.63 | 116 | 321.69 | 137 |
| 25 | 322.96 | 785 | 322.40 | 444 | 323.73 | 1590 | 322.99 | 810 | 322.54 | 520 | 325.71 | 4870 | 324.29 | 2470 | 325.58 | 4650 | 322.51 | 500 | 321.87 | 205 | 321.61 | 109 | 321.69 | 137 |
| 26 | 322.94 | 770 | 322.38 | 434 | 323.95 | 1920 | 322.94 | 740 | 322.59 | 545 | 325.69 | 4830 | 324.20 | 2330 | 325.45 | 4420 | 322.47 | 480 | 321.84 | 193 | 321.62 | 112 | 321.67 | 130 |
| 27 | 322.91 | 750 | 322.42 | 454 | 324.30 | 2490 | 322.88 | 725 | 322.88 | 725 | 325.60 | 4680 | 324.11 | 2180 | 325.14 | 3910 | 322.48 | 485 | 321.85 | 197 | 321.64 | 119 | 321.68 | 133 |
| 28 | 322.89 | 730 | 322.43 | 459 | 324.73 | 3220 | 322.78 | 660 | 324.30 | 2490 | 325.60 | 4680 | 323.98 | 1960 | 324.93 | 3550 | 322.38 | 434 | 321.85 | 197 | 321.60 | 105 | 321.68 | 133 |
| 29 | 322.90 | 740 | 322.39 | 439 | 324.58 | 2960 | 322.85 | 705 | 324.69 | 3150 | 325.41 | 4360 | 323.87 | 1800 | 324.75 | 3250 | 322.34 | 415 | 321.80 | 178 | 321.53 | 82 | 321.64 | 119 |
| 30 | 322.90 | 740 | 322.32 | 406 | 324.81 | 3350 | ..... | ..... | 325.37 | 4290 | 325.16 | 3940 | 324.07 | 2110 | 324.65 | 3080 | 322.33 | 410 | 321.80 | 178 | 321.60 | 105 | 321.64 | 119 |
| 31 | ..... | .... | 322.37 | 430 | 325.14 | 3910 | ..... | ..... | 326.40 | 6020 | ..... | ..... | 324.30 | 2490 | ..... | .... | 322.30 | 396 | 321.81 | 182 | ..... | ..... | 321.59 | 102 |

## Monthly Discharge of Moira River near Foxboro for 1915-6.

Drainage Area 1,038 Square Miles

| Month. | Discharge in Second-feet. | | | Discharge in Second-feet per Square Mile. | | | Run-off. |
|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | Mean. | Maximum. | Minimum. | Mean. | Depth in inches on Drainage Area. |
| November (1915) | 785 | 242 | 411 | .76 | .23 | .40 | .45 |
| December " | 730 | 401 | 501 | .70 | .39 | .48 | .55 |
| January (1916) | 3,910 | 454 | 1,151 | 3.77 | .44 | 1.11 | 1.28 |
| February ..... | 4,580 | 660 | 1,989 | 4.41 | .64 | 1.92 | 2.07 |
| March..... | 6,020 | 520 | 1.025 | 5.80 | .50 | .99 | 1.14 |
| April..... | 8,360 | 3,940 | 5,761 | 8.05 | 3.80 | 5.55 | 6.19 |
| May..... | 3,700 | 1,480 | 2,434 | 3.56 | 1.43 | 2.33 | 2.69 |
| June..... | 6,190 | 2,610 | 3,790 | 5.96 | 2.51 | 3.65 | 4.07 |
| July..... | 3,830 | 396 | 1,148 | 2.73 | .38 | 1.11 | 1.28 |
| August..... | 382 | 178 | 264 | .37 | .17 | .25 | .29 |
| September..... | 174 | 82 | 136 | .17 | .08 | .13 | .15 |
| October,..... | 155 | 79 | 108 | .15 | .08 | .10 | .12 |
| The year..... | 8,360 | 79 | 1,540 | 8.05 | .08 | 1.48 | 20.10 |

## Napanee River near Napanee

Location—At Mink's Bridge, three miles from Napanee, near lot 1, concession 1, Township of Camden, County of Addington.

Records Available—Discharge measurements from August, 1915, and gauge readings from September 8, 1915.

Drainage Area—300 square miles.

Gauge—Standard gauge plates 0 to 6 ft. firmly secured to a 4 x 4 in. pine driven in river bottom and spiked and wired to one of three elms in one cluster on the right bank 400 ft. above the bridge and section.

Channel and Control—The channel is curved above the section to within 20 feet of the bridge, and is straight for 300 feet below. The right bank is high, while the left is comparatively low and liable to overflow. The bed of the stream is composed of rocks and gravel, not likely to shift.

Discharge Measurements—Made by wading at low stages and from bridge at high stages.

Winter Flow—Relation of gauge height to discharge is affected by ice.

Regulation—There are several power developments on the upper part of the river, and also lumber dams on tributary waters.

Accuracy—Two daily readings give only fair mean daily gauge heights.

Observer—Mrs. Dan. O'Shaughnessy, Napanee.

### Discharge Measurements of Napanee River near Napanee in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 12 .... | West. C. W..... | 64 | 74 | 1.02 | 101.77 | 76 (a) | ..... |
| Dec. 4 " | " ..... | 64 | 100 | 1.43 | 102.20 | 143 (b) | ..... |
| 1916 | | | | | | | |
| Jan. 6, .... | " ..... | 64 | 196 | 2.07 | 103.58 | 407 (c) | ..... |
| Feb. 12 " | Campbell, L. L. | 64 | 299 | 2.23 | 105.62 | 668 (d) | ..... |
| Mar. 11 " | " | 64 | 123 | 2 04 | 103.50 | 251 | ..... |
| Apr. 4 " | " | 64 | 490 | 4 66 | 108.23 | 2286 | ..... |
| May 30 " | " | 64 | 298 | 3.36 | 105.25 | 1003 | ..... |
| June 27 " | " | 64 | 350 | 3.98 | 106.08 | 1392 | ..... |
| July 27 " | McLennan, C. C. | 64 | 87 | 1.49 | 101.99 | 130 | ..... |
| Sep. 19 " | Campbell, L. L. | 48 | 31 | 1.17 | 101.07 | 36 (e) | ..... |

(a) Weeds may affect.
(b) Ice at edges of river, above and below section.
(c) Ice above and below section.
(d) Ice measurement.
(e) Dam under construction at Colbrook. Water being held at Petworth dam.

# Daily Gauge Height and Discharge of Napanee River near Napanee for 1915-16

Drainage Area 300 Square miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 101.83 | 100 | 102.12 | 137 | 102.33 | 167 | 106.17 | 1040 | 103.50 | 215 | 108.29 | 2310 | 105.25 | 1030 | 105.08 | 960 | 105.96 | 1330 | 102.05 | 127 | 101.38 | 54 | 101.30 | 48 |
| 2 | 101.79 | 95 | 102.12 | 137 | 102.29 | 161 | 106.08 | 1010 | 103.54 | 226 | 108.38 | 2390 | 105.29 | 1050 | 105.08 | 960 | 106.00 | 1340 | 102.09 | 133 | 101.38 | 54 | 101.38 | 54 |
| 3 | 101.79 | 95 | 102 12 | 137 | 102.21 | 150 | 106.75 | 1280 | 103.56 | 233 | 108.25 | 2290 | 105.42 | 1100 | 105.17 | 995 | 106.29 | 1470 | 101.88 | 106 | 101.30 | 48 | 101.30 | 48 |
| 4 | 101.75 | 91 | 102.12 | 137 | 102.46 | 188 | 107.17 | 1440 | 103.50 | 226 | 108.29 | 2310 | 104.79 | 840 | 105.17 | 995 | 106.67 | 1630 | 101.97 | 117 | 101.30 | 48 | 101.22 | 43 |
| 5 | 101.75 | 91 | 102.04 | 126 | 102.75 | 238 | 108.00 | 1770 | 103.58 | 243 | 108.35 | 2330 | 104.71 | 805 | 105.17 | 995 | 106.62 | 1610 | 101.97 | 117 | 101.26 | 46 | 101.22 | 43 |
| 6 | 101.67 | 82 | 102.12 | 137 | 102.71 | 231 | 107.25 | 1440 | 103.50 | 233 | 108.88 | 2550 | 104.50 | 720 | 105.08 | 960 | 105.58 | 1170 | 101.51 | 66 | 101.26 | 46 | 101.22 | 43 |
| 7 | 101.71 | 86 | 102.08 | 131 | 102.29 | 155 | 107.25 | 1430 | 103.54 | 243 | 108.62 | 2450 | 104.33 | 655 | 104.92 | 890 | 104.50 | 720 | 101.80 | 96 | 101.22 | 43 | 101.22 | 43 |
| 8 | 101.79 | 95 | 102.12 | 137 | 102.67 | 212 | 106.96 | 1290 | 103.50 | 240 | 108.67 | 2470 | 104.29 | 640 | 104.58 | 755 | 104.38 | 675 | 101.80 | 96 | 101.22 | 43 | 101.13 | 38 |
| 9 | 101.79 | 95 | 102.12 | 137 | 102.71 | 212 | 107.25 | 1400 | 103.50 | 243 | 108.12 | 2230 | 104.12 | 580 | 104.71 | 805 | 104.04 | 555 | 101.88 | 106 | 101.22 | 43 | 101.13 | 38 |
| 10 | 101.75 | 91 | 102.08 | 131 | 102.62 | 192 | 106.17 | 935 | 103.42 | 233 | 108.08 | 2220 | 104.04 | 555 | 104.75 | 820 | 103.88 | 505 | 101.72 | 87 | 101.22 | 43 | 101.22 | 43 |
| 11 | 101.71 | 86 | 102.12 | 137 | 102.67 | 193 | 105.71 | 730 | 103.42 | 236 | 108.04 | 2200 | 104.12 | 580 | 105.33 | 1060 | 103.71 | 452 | 101.88 | 106 | 101.22 | 43 | 101.22 | 43 |
| 12 | 101.79 | 95 | 102.21 | 150 | 102.67 | 185 | 105.66 | 705 | 103.42 | 256 | 107.25 | 1870 | 104.12 | 580 | 105.50 | 1130 | 103.67 | 441 | 101.88 | 106 | 101.22 | 43 | 101.22 | 43 |
| 13 | 101.75 | 91 | 102.33 | 167 | 103.39 | 368 | 105.33 | 575 | 103.42 | 261 | 107.50 | 1980 | 103.79 | 475 | 105.42 | 1100 | 103.58 | 418 | 101.55 | 70 | 101.26 | 46 | 101.22 | 43 |
| 14 | 101.79 | 95 | 102.29 | 161 | 102 75 | 197 | 105.17 | 530 | 103.42 | 267 | 108.00 | 2180 | 103.75 | 464 | 105.25 | 1030 | 103.50 | 394 | 101.38 | 54 | 101.30 | 48 | 101.22 | 43 |
| 15 | 101.75 | 91 | 102 33 | 167 | 102.71 | 183 | 105.08 | 510 | 103.44 | 275 | 108.50 | 2390 | 103.75 | 464 | 105.17 | 995 | 103.50 | 394 | 101.34 | 51 | 101.30 | 48 | 101.22 | 43 |
| 16 | 101.75 | 91 | 102.21 | 150 | 102.79 | 190 | 105.04 | 505 | 103.33 | 256 | 108.52 | 2400 | 104.12 | 580 | 105.50 | 1130 | 103.12 | 308 | 101.22 | 43 | 101.22 | 43 | 101.30 | 48 |
| 17 | 101.71 | 86 | 102.29 | 161 | 102.79 | 183 | 104.92 | 472 | 103.33 | 265 | 108.10 | 2230 | 106.00 | 1340 | 108.04 | 2200 | 103.12 | 308 | 101.30 | 48 | 101.22 | 43 | 101.30 | 48 |
| 18 | 101.79 | 95 | 102.29 | 161 | 102.71 | 172 | 104.62 | 394 | 103.33 | 271 | 108.02 | 2190 | 105.71 | 1220 | 107.29 | 1890 | 102.71 | 231 | 101.47 | 62 | 101.22 | 43 | 101.30 | 48 |
| 19 | 101.96 | 116 | 102.29 | 161 | 102.75 | 173 | 104.42 | 352 | 103.33 | 276 | 108.00 | 2180 | 105.54 | 1150 | 106.67 | 1630 | 102.58 | 208 | 101.47 | 62 | 101.26 | 46 | 101.30 | 48 |
| 20 | 102.12 | 137 | 102.29 | 161 | 102.71 | 161 | 104.12 | 292 | 103.29 | 275 | 107.35 | 1910 | 105.58 | 1170 | 106.67 | 1630 | 102.50 | 195 | 101.30 | 48 | 101.13 | 38 | 101.30 | 48 |
| 21 | 102.71 | 231 | 102.29 | 161 | 102.67 | 150 | 104.04 | 280 | 103.42 | 306 | 106.71 | 1640 | 105.50 | 1130 | 106.67 | 1630 | 102.50 | 195 | 101.30 | 48 | 101.09 | 36 | 101.30 | 48 |
| 22 | 102.79 | 245 | 102.25 | 156 | 102.75 | 157 | 103.88 | 254 | 103.38 | 304 | 106.67 | 1630 | 105.50 | 1130 | 106.67 | 1630 | 102.50 | 195 | 101.30 | 48 | 101.05 | 35 | 101.34 | 51 |
| 23 | 102.29 | 161 | 102.29 | 161 | 102.67 | 141 | 103.88 | 258 | 103.29 | 292 | 107.00 | 1770 | 105.58 | 1170 | 106.58 | 1590 | 102.33 | 167 | 101.34 | 51 | 101.05 | 35 | 101.47 | 62 |
| 24 | 101.92 | 111 | 102.29 | 161 | 104.00 | 380 | 103.71 | 231 | 103.26 | 290 | 107.25 | 1870 | 105.58 | 1170 | 106.50 | 1560 | 102.42 | 181 | 101.30 | 48 | 101.05 | 35 | 101.47 | 62 |
| 25 | 101.71 | 86 | 102.33 | 167 | 103.83 | 332 | 103.71 | 234 | 103.25 | 296 | 107.60 | 2020 | 105.46 | 1120 | 106.83 | 1690 | 102.33 | 167 | 101.38 | 54 | 101.05 | 35 | 101.42 | 58 |
| 26 | 102.29 | 161 | 102.42 | 181 | 104.25 | 427 | 103.69 | 234 | 103.54 | 365 | 107.00 | 1760 | 105.42 | 1100 | 106.67 | 1630 | 102.29 | 161 | 101.38 | 54 | 101.05 | 35 | 101.30 | 48 |
| 27 | 102.29 | 161 | 102.67 | 224 | 105.38 | 810 | 103.62 | 226 | 104.29 | 595 | 107.02 | 1770 | 105.42 | 1100 | 106.21 | 1430 | 102.29 | 161 | 101.38 | 54 | 101.22 | 43 | 101.22 | 43 |
| 28 | 102.12 | 137 | 102.58 | 209 | 106.00 | 1050 | 103.62 | 229 | 106.21 | 1390 | 106.02 | 1350 | 105.17 | 995 | 106.17 | 1420 | 102.12 | 137 | 101.38 | 54 | 101.22 | 43 | 101.30 | 48 |
| 29 | 102.21 | 150 | 102.46 | 188 | 104.83 | 575 | 103.54 | 219 | 108.75 | 2470 | 106.00 | 1340 | 105.12 | 975 | 106.17 | 1420 | 102.00 | 121 | 101.38 | 54 | 101.30 | 48 | 101.38 | 54 |
| 30 | 102.21 | 150 | 102.42 | 181 | 105.42 | 700 | ..... | .... | 109.50 | 2800 | 106.00 | 1340 | 105.12 | 975 | 106.08 | 1380 | 102.00 | 121 | 101.38 | 54 | 101.30 | 48 | 101.42 | 58 |
| 31 | ..... | ..... | 102.38 | 175 | 105.67 | 870 | ..... | .... | 109.00 | 2600 | ..... | .... | 105.17 | 995 | ..... | .... | 102.08 | 131 | 101.38 | 54 | ..... | ..... | 101.38 | 54 |

## Monthly Discharge of Napanee River near Napanee for 1915-6

Drainage Area, 300 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 245 | 82 | 117 | .82 | .27 | .39 | .44 |
| December | 224 | 126 | 158 | .75 | .42 | .53 | .61 |
| January (1916) | 1,050 | 141 | 307 | 3.50 | .47 | 1.02 | 1.18 |
| February | 1,770 | 219 | 700 | 5.90 | .73 | 2.33 | 2.51 |
| March | 2,800 | 215 | 538 | 9.33 | .72 | 1.79 | 2.06 |
| April | 2,550 | 1,340 | 2,052 | 8.50 | 4.47 | 6.84 | 7.63 |
| May | 1,340 | 464 | 899 | 4.47 | 1.55 | 3.00 | 3.46 |
| June | 2,200 | 805 | 1,277 | 7.33 | 2.68 | 4.26 | 4.75 |
| July | 1,630 | 121 | 519 | 5.43 | .40 | 1.73 | 1.99 |
| August | 133 | 43 | 73 | .44 | .14 | .24 | .28 |
| September | 54 | 35 | 43 | .18 | .12 | .14 | .16 |
| October | 62 | 38 | 48 | .21 | .13 | .16 | .18 |
| The year | 2,800 | 35 | 557 | 9.33 | .12 | 1.86 | 25.32 |

## Petawawa River near Petawawa

**Location**—About 1½ miles southwest of Petawawa station above C.P.R. bridge, near lot 15, concession 7, Township of Petawawa, County of Renfrew.

**Records Available**—Discharge measurements from October, 1915, and daily gauge heights from November 5, 1915.

**Drainage Area**—1,572 square miles.

**Gauge**—Temporary mark used from December 15, 1915, to February 29, 1916, to obtain water elevations afterwards reduced to same datum as permanent gauge, screwed to plank, bolted to large rock in river, back of Rantzs' house, 1,000 feet above the station, and 200 feet above the head of the rapids. This gauge has been used for gauge readings since March 1, 1916.

**Discharge Measurements**—The discharge measurements for normal and low flows, summer and winter, are made by wading in fast water near the end of the straight stretch in the river downstream from the gauge. At high water measurements are made opposite the hotel in the lower village from a boat.

**Channel and Control**—The controlling section is a few hundred yards above the metering section. The river is straight for a few hundred feet each side of the section, but is crooked and fast for two miles below the section. The soundings for depth are taken for each metering as the water is fast and the river bed of stones may change slightly between meterings, and the depths do not change the same as the gauge readings.

**Winter Flow**—The control here is at fast water and only slightly affected by ice.

**Accuracy**—Gauge readings twice daily give good mean daily gauge height as the fluctuation at the gauge is slow.

**Observer**—Elsa Rantz, Petawawa.

### Discharge Measurements of Petawawa River near Petawawa in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 5.... | West, C. W..... | 163 | 231 | 2.91 | 101.58 | 673 | ..... |
| Dec. 15.... | " | 162 | 231 | 2.91 | 101.57 | 605 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 28.... | Campbell, L. L.. | 160 | 215 | 2.90 | 101.74 | 623 (a) | ..... |
| Feb. 25.... | McLennan, C. C. | 158 | 234 | 3.18 | 101.78 | 745 (a) | ..... |
| Mar. 23.... | " | 145 | 203 | 3.10 | 101.71 | 629 (b) | ..... |
| June 15.... | " | 319 | 1,805 | 1.61 | 103.50 | 2,921 | ..... |
| July 12.... | " | 312 | 1,466 | 1.28 | 102.79 | 1,879 | ..... |
| Sept. 8.... | " | 169 | 260 | 3.40 | 101.92 | 882 | ..... |
| Oct. 28.... | Campbell, L. L.. | 197 | 327 | 3.62 | 102.33 | 1,186 | ..... |

(a) Section open. Lake above frozen.
(b) Ice at edges of section.

## Daily Gauge Height and Discharge of Petawawa River near Petawawa for 1915-6

Drainage Area 1,572 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | ..... | ..... | ..... | .... | 101.55 | 595 | 101.76 | 740 | 101.83 | 790 | 102.29 | 1180 | 104.42 | 4630 | 104.00 | 3830 | 103.92 | 3680 | 102.50 | 1410 | 101.67 | 675 | 101.54 | 585 |
| 2 | ..... | ..... | ..... | .... | 101.57 | 610 | 101.78 | 755 | 101.83 | 790 | 102.46 | 1370 | 104.42 | 4630 | 103.96 | 3750 | 103.88 | 3620 | 102.46 | 1370 | 101.71 | 705 | 101.50 | 560 |
| 3 | ..... | ..... | ..... | .... | 101.59 | 620 | 101.78 | 755 | 101.83 | 790 | 102.62 | 1550 | 104.54 | 4860 | 103.92 | 3680 | 103.75 | 3350 | 102.50 | 1410 | 101.75 | 735 | 101.50 | 560 |
| 4 | ..... | ..... | ..... | .... | 101.57 | 610 | 101.80 | 770 | 101.83 | 790 | 102.83 | 1820 | 104.67 | 5000 | 103.88 | 3620 | 103.62 | 3020 | 102.42 | 1320 | 101.75 | 735 | 101.50 | 560 |
| 5 | ..... | ..... | ..... | .... | 101.57 | 610 | 101.78 | 755 | 101.79 | 765 | 102.92 | 1950 | 104.67 | 5000 | 103.83 | 3510 | 103.29 | 2560 | 102.38 | 1280 | 101.75 | 735 | 101.50 | 560 |
| 6 | ..... | ..... | ..... | .... | 101.57 | 610 | 101.80 | 770 | 101.75 | 735 | 102.92 | 1950 | 104.67 | 5000 | 103.71 | 3280 | 103.12 | 2270 | 102.33 | 1230 | 101.75 | 735 | 101.50 | 560 |
| 7 | ..... | ..... | ..... | .... | 101.59 | 620 | 101.82 | 785 | 101.83 | 790 | 102.92 | 1950 | 104.50 | 4780 | 103.67 | 3210 | 103.00 | 2070 | 102.21 | 1110 | 101.75 | 735 | 101.50 | 560 |
| 8 | ..... | ..... | ..... | .... | 101.57 | 610 | 101.80 | 770 | 101.79 | 765 | 102.92 | 1950 | 104.54 | 4630 | 103.58 | 3060 | 102.96 | 2010 | 102.29 | 1180 | 101.75 | 735 | 101.50 | 560 |
| 9 | ..... | ..... | ..... | .... | 101.53 | 580 | 101.80 | 770 | 101.83 | 790 | 102.92 | 1950 | 104.29 | 4380 | 103.50 | 2920 | 102.88 | 1890 | 102.33 | 1230 | 101.75 | 735 | 101.50 | 560 |
| 10 | ..... | ..... | ..... | .... | 101.57 | 610 | 101.80 | 770 | 101.83 | 790 | 102.93 | 1970 | 104.21 | 4230 | 103.50 | 2920 | 102.79 | 1770 | 102.25 | 1150 | 101.75 | 735 | 101.50 | 560 |
| 11 | ..... | ..... | ..... | .... | 101.55 | 595 | 101.80 | 770 | 101.75 | 735 | 103.00 | 2070 | 104.17 | 4150 | 103.58 | 3060 | 102.75 | 1720 | 102.17 | 1070 | 101.75 | 735 | 101.50 | 560 |
| 12 | ..... | ..... | ..... | .... | 101.57 | 610 | 101.82 | 785 | 101.75 | 735 | 103.08 | 2210 | 104.21 | 4230 | 103.50 | 2920 | 102.79 | 1770 | 102.17 | 1070 | 101.75 | 735 | 101.50 | 560 |
| 13 | ..... | ..... | ..... | .... | 101.59 | 620 | 101.78 | 755 | 101.75 | 735 | 103.21 | 2430 | 104.08 | 3980 | 103.42 | 2780 | 102.83 | 1820 | 102.17 | 1070 | 101.75 | 735 | 101.50 | 560 |
| 14 | ..... | ..... | ..... | .... | 101.57 | 610 | 101.78 | 755 | 101.75 | 735 | 103.33 | 2630 | 104.04 | 3910 | 103.42 | 2780 | 102.83 | 1820 | 102.17 | 1070 | 101.75 | 735 | 101.50 | 560 |
| 15 | ..... | ..... | 101.57 | 610 | 101.55 | 595 | 101.78 | 755 | 101.75 | 735 | 103.42 | 2780 | 104.00 | 3830 | 103.50 | 2920 | 102.92 | 1950 | 102.08 | 990 | 101.75 | 735 | 101.50 | 560 |
| 16 | ..... | ..... | 101.55 | 595 | 101.55 | 595 | 101.78 | 755 | 101.75 | 735 | 103.50 | 2920 | 104.00 | 3830 | 103.67 | 3210 | 102.92 | 1950 | 102.04 | 960 | 101.75 | 735 | 101.50 | 560 |
| 17 | ..... | ..... | 101.59 | 620 | 101.55 | 595 | 101.80 | 770 | 101.75 | 735 | 103.62 | 3120 | 104.00 | 3830 | 103.92 | 3680 | 102.92 | 1950 | 102.00 | 925 | 102.00 | 675 | 101.50 | 560 |
| 18 | ..... | ..... | 101.55 | 595 | 101.57 | 610 | 101.80 | 770 | 101.75 | 735 | 103.75 | 3350 | 104.21 | 4230 | 103.83 | 3510 | 103.00 | 2070 | 102.00 | 925 | 102.00 | 675 | 101.50 | 560 |
| 19 | ..... | ..... | 101.59 | 620 | 101.55 | 595 | 101.80 | 770 | 101.75 | 735 | 103.79 | 3430 | 104.29 | 4380 | 103.83 | 3510 | 103.00 | 2070 | 102.00 | 925 | 102.00 | 675 | 101.62 | 640 |
| 20 | ..... | ..... | 101.57 | 610 | 101.55 | 595 | 101.78 | 755 | 101.75 | 735 | 103.75 | 3350 | 104.33 | 4460 | 103.79 | 3430 | 103.04 | 2140 | 101.92 | 860 | 101.92 | 615 | 101.67 | 675 |
| 21 | ..... | ..... | 101.59 | 620 | 101.55 | 595 | 101.80 | 770 | 101.75 | 735 | 103.67 | 3210 | 104.33 | 4460 | 104.08 | 3980 | 103.33 | 2630 | 101.92 | 860 | 101.92 | 640 | 101.67 | 675 |
| 22 | ..... | ..... | 101.57 | 640 | 101.59 | 620 | 101.76 | 740 | 101.71 | 705 | 103.54 | 2990 | 104.33 | 4460 | 104.29 | 4380 | 103.33 | 2630 | 101.92 | 860 | 101.92 | 675 | 101.83 | 790 |
| 23 | ..... | ..... | 101.55 | 595 | 101.65 | 660 | 101.78 | 755 | 101.75 | 735 | 103.67 | 3210 | 104.29 | 4380 | 104.29 | 4380 | 103.21 | 2430 | 101.83 | 790 | 101.83 | 675 | 101.92 | 860 |
| 24 | ..... | ..... | 101.59 | 620 | 101.65 | 660 | 101.76 | 740 | 101.75 | 735 | 103.75 | 3350 | 104.33 | 4310 | 104.33 | 4460 | 103.04 | 2140 | 101.79 | 765 | 101.67 | 675 | 102.25 | 1050 |
| 25 | ..... | ..... | 101.61 | 635 | 101.65 | 660 | 101.80 | 770 | 101.75 | 735 | 103.83 | 3510 | 104.38 | 4460 | 104.29 | 4380 | 103.00 | 2070 | 101.75 | 735 | 101.67 | 675 | 102.25 | 1050 |
| 26 | ..... | ..... | 101.63 | 650 | 101.68 | 685 | 101.80 | 770 | 101.75 | 735 | 103.96 | 3750 | 104.38 | 4550 | 104.25 | 4310 | 103.00 | 2070 | 101.75 | 735 | 101.62 | 640 | 102.25 | 1050 |
| 27 | ..... | ..... | 101.59 | 620 | 101.70 | 695 | 101.78 | 755 | 101.71 | 705 | 104.12 | 4060 | 104.25 | 4310 | 104.17 | 4150 | 102.88 | 1890 | 101.71 | 705 | 101.58 | 615 | 102.25 | 1050 |
| 28 | ..... | ..... | 101.61 | 635 | 101.74 | 725 | 101.76 | 740 | 101.79 | 765 | 104.25 | 4300 | 104.17 | 4150 | 104.17 | 4150 | 102.79 | 1770 | 101.71 | 705 | 101.58 | 615 | 102.33 | 1230 |
| 29 | ..... | ..... | 101.59 | 620 | 101.74 | 725 | 101.78 | 755 | 101.83 | 790 | 104.42 | 4630 | 104.17 | 4150 | 104.04 | 3910 | 102.75 | 1720 | 101.71 | 705 | 101.58 | 615 | 102.33 | 1230 |
| 30 | ..... | ..... | 101.57 | 610 | 101.74 | 725 | ..... | .... | 101.92 | 860 | 104.50 | 4780 | 104.12 | 4060 | 103.92 | 3680 | 102.75 | 1720 | 101.67 | 675 | 101.58 | 615 | 102.33 | 1230 |
| 31 | ..... | ..... | 101.55 | 595 | 101.74 | 725 | ..... | .... | 102.08 | 990 | ..... | .... | 104.00 | 3830 | ..... | .... | 102.71 | 1660 | 101.67 | 675 | ..... | .... | 102.33 | 1230 |

## Monthly Discharge of Petawawa River near Petawawa for 1915-6

Drainage Area, 1,572 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| 1915 | | | | | | | |
| November | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| December 15-31 | 650 | 595 | 615 | .41 | .38 | .39 | .25 |
| January (1916) | 725 | 580 | 631 | .46 | .37 | .40 | .46 |
| February | 785 | 740 | 761 | .50 | .47 | .48 | .51 |
| March | 990 | 705 | 762 | .63 | .45 | .48 | .55 |
| April | 4,780 | 1,180 | 2,791 | 3.04 | .75 | 1.78 | 1.99 |
| May | 5,000 | 3,830 | 4,358 | 3.18 | 2.44 | 2.77 | 3.19 |
| June | 4,460 | 2,780 | 3,579 | 2.84 | 1.77 | 2.28 | 2.54 |
| July | 3,680 | 1,660 | 2,201 | 2.34 | 1.06 | 1.40 | 1.61 |
| August | 1,410 | 675 | 992 | .90 | .43 | .63 | .73 |
| September | 735 | 615 | 692 | .46 | .39 | .44 | .49 |
| October | 1,230 | 560 | 738 | .78 | .36 | .46 | .53 |
| The period | 5,000 | 560 | 1,691 | 3.18 | .36 | 1.08 | 12.93 |

## Tay River near Glen Tay

**Location**—Near lots 20 and 21, concession 11, Township of Bathurst, County of Lanark. At the highway bridge north of the Village of Glen Tay, and east of the auxiliary plant of the Canadian Electric & Water Company, Limited, of Perth and Ottawa.

**Records Available**—Discharge measurements July, 1915, and gauge readings from July 10, 1915.

**Drainage Area**—204 square miles.

**Gauge**—Vertical steel staff 0 to 3 feet fastened to the pier of bridge one foot above section.

**Channel and Control**—The channel is straight from the dam 150 feet above and straight for 250 feet below the section. The banks are high, and not liable to overflow. The bed of the river is composed of shale and stones, not shifting. The flow is confined between the bridge abutments at all stages. The control is a short distance below the section, and the flood flow is likely to disturb it to some extent.

**Discharge Measurements**—Made by wading at ordinary stages, and from the bridge at very high stages.

**Winter Flow**—Channel at section likely free from ice during winter, but will be affected by ice formation below the section.

**Regulation**—The river is dammed immediately above the section and one mile further up, for power purposes, and the Department of Railways and Canals operate a dam at the foot of Bob's Lake for regulating canal purposes.

**Accuracy**—The open-water rating will be very good.

**Observer**—Paul Griffin, Manion P.O.

### Discharge Measurements of Tay River near Glen Tay in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 8..... | West, C. W .... | 48 | 60 | 2.78 | 94.38 | 166 | ..... |
| " 30..... | " | 48 | 58 | 2.69 | 94.34 | 157 | ..... |
| 1916 | | | | | | | |
| Jan. 10 ..... | " | 40 | 37 | 2.02 | 94.05 | 74 | ..... |
| Feb. 9 ..... | " | 42 | 56 | 2.90 | 94.38 | 161(a) | ..... |
| Mar. 7..... | McLennan, C. C. | 29 | 56 | 3.15 | 94.80 | 175(b) | ..... |
| Apr. 3..... | Campbell, L. L. . | 43 | 172 | 5.72 | 96.71 | 981 | ..... |
| May 26..... | McLennan, C. C.. | 48 | 104 | 5.49 | 95.38 | 573 | ..... |
| June 21..... | Campbell, L. L. . | 47 | 158 | 5.89 | 96.38 | 927 | ..... |
| Sept. 20 .... | " | 46 | 45 | 1.70 | 94.05 | 76 | ..... |
| Oct. 12 ..... | " | 35 | 32 | 2.27 | 94.05 | 72 | ..... |

(a) Ice at north edge of section.
(b) Ice below section.

# Daily Gauge Height and Discharge of Tay River near Glen Tay for 1915-6

Drainage Area, 204 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 93.63 | 28 | 94.34 | 146 | 94.05 | 71 | 95.55 | 590 | 94.42 | 86 | 97.75 | 1400 | 94.88 | 342 | 95.55 | 590 | 95.67 | 635 | 94.55 | 220 | 94.46 | 188 | 94.46 | 188 |
| 2 | 93.96 | 56 | 94.36 | 152 | 94.46 | 188 | 95.01 | 390 | 94.55 | 113 | 97.46 | 1300 | 95.01 | 390 | 95.46 | 555 | 95.63 | 620 | 94.55 | 220 | 94.46 | 188 | 94.05 | 71 |
| 3 | 93.94 | 53 | 94.01 | 63 | 94.01 | 63 | 94.92 | 357 | 94.59 | 121 | 96.67 | 1010 | 95.01 | 390 | 95.63 | 620 | 95.63 | 620 | 94.55 | 220 | 94.46 | 188 | 94.09 | 79 |
| 4 | 93.94 | 53 | 94.01 | 63 | 94.09 | 79 | 94.82 | 320 | 94.67 | 142 | 96.21 | 835 | 95.15 | 442 | 95.63 | 620 | 95.55 | 590 | 94.55 | 220 | 94.46 | 188 | 94.09 | 79 |
| 5 | 93.96 | 56 | 93.96 | 56 | 94.09 | 79 | 94 61 | 243 | 94.63 | 124 | 95.63 | 620 | 95.13 | 435 | 95.63 | 620 | 95.42 | 540 | 94.46 | 188 | 94.46 | 188 | 94.05 | 71 |
| 6 | 93.96 | 56 | 93.98 | 58 | 94.25 | 119 | 94.55 | 220 | 94.80 | 173 | 95.57 | 595 | 95.09 | 420 | 95.55 | 590 | 95.30 | 498 | 94.46 | 188 | 94.42 | 173 | 94.25 | 119 |
| 7 | 94.01 | 63 | 93.98 | 58 | 94.01 | 63 | 94.48 | 195 | 94.69 | 132 | 95.25 | 479 | 94.96 | 372 | 95.55 | 590 | 95.38 | 530 | 94.46 | 188 | 94.55 | 220 | 94.05 | 71 |
| 8 | 94.26 | 152 | 94.01 | 63 | 94.13 | 88 | 94.63 | 250 | 94.80 | 173 | 95.30 | 498 | 94.96 | 372 | 95.55 | 590 | 95.21 | 464 | 94.46 | 188 | 94.55 | 220 | 94.05 | 71 |
| 9 | 94.34 | 146 | 93.96 | 56 | 93.96 | 56 | 94.40 | 166 | 94.98 | 246 | 95.21 | 464 | 94.92 | 357 | 95.84 | 700 | 95.09 | 420 | 94.46 | 188 | 94.46 | 188 | 94.05 | 71 |
| 10 | 93.96 | 56 | 93.98 | 58 | 93.96 | 56 | 94.36 | 152 | 95.11 | 298 | 95.13 | 435 | 94.88 | 342 | 95.84 | 700 | 94.96 | 372 | 94.46 | 188 | 94.21 | 108 | 94.05 | 71 |
| 11 | 93.96 | 56 | 94.01 | 63 | 93.92 | 51 | 94.32 | 132 | 95.11 | 306 | 95.05 | 405 | 94.88 | 342 | 96.17 | 820 | 94.88 | 342 | 94.42 | 173 | 94.30 | 132 | 94.05 | 71 |
| 12 | 93.96 | 56 | 94.40 | 166 | 94.19 | 102 | 94.30 | 124 | 95.13 | 316 | 95.09 | 420 | 94.88 | 342 | 96.21 | 835 | 94.88 | 342 | 94.46 | 188 | 94.30 | 132 | 94.05 | 71 |
| 13 | 93.96 | 56 | 94.05 | 71 | 93.98 | 58 | 94.35 | 142 | 95.19 | 346 | 95.01 | 390 | 94.80 | 313 | 96.09 | 790 | 94.80 | 313 | 94.38 | 159 | 94.30 | 132 | 94.05 | 71 |
| 14 | 93.94 | 53 | 94.05 | 71 | 94.21 | 108 | 94.25 | 102 | 95.15 | 335 | 94.96 | 372 | 94.80 | 313 | 95.92 | 725 | 94.75 | 294 | 94.38 | 159 | 94.46 | 188 | 94.05 | 71 |
| 15 | 93.96 | 56 | 94.05 | 71 | 93.88 | 46 | 94.17 | 79 | 94.80 | 213 | 95.05 | 405 | 94.71 | 280 | 95.80 | 685 | 94.80 | 313 | 94.34 | 146 | 94.51 | 206 | 94.01 | 63 |
| 16 | 93.96 | 56 | 94.05 | 71 | 93.96 | 56 | 94.25 | 95 | 94.92 | 261 | 95.25 | 479 | 94.71 | 280 | 95.92 | 725 | 94.80 | 313 | 94.42 | 173 | 94.34 | 146 | 94.01 | 63 |
| 17 | 93.96 | 56 | 94.05 | 71 | 93.96 | 56 | 94.21 | 81 | 95.07 | 324 | 95.09 | 420 | 95.96 | 740 | 96.55 | 960 | 94.75 | 294 | 94.46 | 188 | 94.51 | 206 | 93.96 | 56 |
| 18 | 93.96 | 56 | 94.05 | 71 | 94.19 | 102 | 94.23 | 83 | 95.03 | 313 | 94.94 | 365 | 96.38 | 900 | 96.55 | 960 | 94.80 | 313 | 94.46 | 188 | 94.25 | 119 | 94.01 | 63 |
| 19 | 93.96 | 56 | 93.98 | 58 | 94.19 | 102 | 94.15 | 63 | 95.23 | 394 | 94.80 | 313 | 96.51 | 945 | 96.55 | 960 | 94.84 | 327 | 94.51 | 206 | 94.25 | 119 | 93.96 | 56 |
| 20 | 94.03 | 67 | 94.09 | 79 | 94.19 | 102 | 94.03 | 46 | 95.15 | 368 | 94.71 | 280 | 96.01 | 760 | 96.63 | 990 | 94.80 | 313 | 94.51 | 206 | 94.25 | 119 | 94.01 | 63 |
| 21 | 94.13 | 88 | 94.09 | 79 | 94.19 | 102 | 94.19 | 65 | 95.19 | 390 | 94.63 | 250 | 95.67 | 635 | 96.59 | 975 | 94.71 | 280 | 94.55 | 220 | 94.30 | 132 | 94.01 | 63 |
| 22 | 94.11 | 83 | 94.51 | 206 | 94.42 | 173 | 94.07 | 47 | 95.19 | 394 | 94.73 | 287 | 95.46 | 555 | 96.46 | 925 | 94.71 | 280 | 94.55 | 220 | 94.25 | 119 | 94.05 | 71 |
| 23 | 94.36 | 152 | 94.51 | 206 | 94.71 | 280 | 94.23 | 67 | 94.96 | 313 | 95.25 | 479 | 95.59 | 605 | 96.25 | 860 | 94.71 | 280 | 94.55 | 220 | 94.25 | 119 | 94.01 | 63 |
| 24 | 94.38 | 159 | 94.15 | 93 | 94.59 | 235 | 94.33 | 86 | 94.96 | 320 | 95.28 | 490 | 95.83 | 620 | 96.13 | 805 | 94.71 | 280 | 94.55 | 220 | 94.42 | 173 | 93.96 | 56 |
| 25 | 93.98 | 58 | 94.21 | 108 | 94.96 | 372 | 94.36 | 88 | 96.17 | 405 | 95.09 | 420 | 95.55 | 590 | 96.13 | 805 | 94.71 | 280 | 94.55 | 220 | 94.42 | 173 | 93.96 | 56 |
| 26 | 94.34 | 146 | 94.09 | 79 | 95.17 | 450 | 94.11 | 45 | 95.13 | 394 | 95.05 | 405 | 95.46 | 555 | 96.05 | 775 | 94.63 | 250 | 94.55 | 220 | 94.01 | 63 | 93.96 | 56 |
| 27 | 94.34 | 146 | 94.13 | 88 | 95.11 | 427 | 94.21 | 54 | 95.11 | 394 | 94.96 | 372 | 95.38 | 530 | 95 96 | 740 | 94.63 | 250 | 94.55 | 220 | 94.05 | 71 | 93.92 | 51 |
| 28 | 93.96 | 56 | 94.30 | 132 | 95.13 | 435 | 94.38 | 83 | 95.05 | 376 | 94.96 | 372 | 95.34 | 515 | 95.92 | 725 | 94.59 | 235 | 84.55 | 220 | 94 09 | 79 | 93.92 | 51 |
| 29 | 94.01 | 63 | 94.34 | 146 | 94.63 | 250 | 94.38 | 79 | 95.42 | 520 | 94.92 | 357 | 95.38 | 530 | 95.80 | 685 | 94.55 | 220 | 94.46 | 188 | 94.17 | 98 | 94.13 | 88 |
| 30 | 93.98 | 58 | 94.63 | 250 | 94.59 | 235 | ..... | .... | 97.38 | 1250 | 94.92 | 357 | 95.55 | 590 | 95.75 | 665 | 94.55 | 220 | 94.46 | 188 | 94.13 | 88 | 94.17 | 98 |
| 31 | ..... | ..... | 94.17 | 98 | 94.71 | 280 | ..... | .... | 97.80 | 1420 | ..... | ..... | 95.63 | 620 | ..... | ..... | 94.55 | 220 | 94.46 | 188 | ..... | ..... | 94.13 | 88 |

## Monthly Discharge of Tay River near Glen Tay for 1915-6

Drainage Area 204 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 159 | 28 | 76 | .78 | .14 | .37 | .41 |
| December . " | 250 | 56 | 98 | 1.23 | .27 | .48 | .55 |
| January .. (1916) | 450 | 46 | 158 | 2.21 | .23 | .77 | .89 |
| February . ..... | 590 | 45 | 153 | 2.89 | .22 | .75 | .81 |
| March..... | 1,420 | 86 | 354 | 6.96 | .42 | 1.74 | 2.01 |
| April..... | 1,400 | 250 | 509 | 6.86 | 1.23 | 2.50 | 2.79 |
| May..... | 945 | 280 | 497 | 4.63 | 1.37 | 2.44 | 2.81 |
| June..... ... | 990 | 555 | 752 | 4.85 | 2.72 | 3.69 | 4.12 |
| July..... | 635 | 220 | 363 | 3.11 | 1.08 | 1.78 | 2.05 |
| August..... | 220 | 146 | 197 | 1.08 | .72 | .97 | 1.12 |
| September ..... | 220 | 63 | 149 | 1.08 | .31 | .73 | .81 |
| October..... | 188 | 51 | 74 | .92 | .25 | .36 | .42 |
| The year ..... | 1,400 | 28 | 281 | 6.96 | .14 | 1.38 | 18.78 |

## York River near Bancroft

**Location**—At the highway bridge one and a half miles below Bancroft, near lots 53 and 54, west of the Hastings Road, Township of Faraday, County of Hastings.

**Records Available**—Discharge measurements from July, 1915. Daily gauge heights from July 16, 1915.

**Drainage Area**—374 square miles.

**Gauge**—Vertical standard gauge plates 0 to 6 ft. secured on the upstream face of the right bridge pier near the west corner.

**Channel and Control**—The channel is straight for 400 feet above and 250 feet below the section. The banks are high and sandy, not liable to overflow. The bed is composed of gravel. Flow takes place in two channels under the bridge at high stages, and in one channel at lower stages.

**Discharge Measurements**—Made from the bridge at all stages.

**Winter Flow**—Ice will materially affect the open-water relation of gauge heights to discharge, and frazil ice at times makes meterings difficult.

**Regulation**—The dam at Bancroft gives very small storage, and the plants there do not use the entire flow. On account of the electrical plant working at night, and the other mills during the day, daily gauge readings give fairly accurate figures for the mean daily stage. Some of the tributary streams are controlled by dams for storage and driving purposes for the lumber industry.

**Accuracy**—As the river bed is composed of gravel, slight movement no doubt takes place without changing the general profile and section.

**Observer**—J. L. Churcher, Bancroft.

### Discharge Measurements of York River near Bancroft in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 11.... | West, C. W. .... | 55 | 207 | 1.06 | 101.21 | 220 | ..... |
| Dec. 3.... | " .. | 55 | 212 | 1.17 | 101.31 | 248 (a) | ..... |
| 1916 | | | | | | | |
| Jan, 7.... | " .. | 55 | 205 | 1.05 | 101.71 | 216 (b) | ..... |
| Feb. 10.... | McLennan, C. C. | 55 | 262 | 1.14 | 102.24 | 298 (c) | ..... |
| Mar. 8.... | " .. | 55 | 308 | 1.82 | 103.38 | 561 (d) | ..... |
| April 5.... | Campbell, L. L. . | 69 | 485 | 2.54 | 105.29 | 1,232 | ..... |
| May 31.... | " .. | 68 | 376 | 2.04 | 103.70 | 769 | ..... |
| June 28.... | " .. | 68 | 269 | 1.41 | 102.06 | 380 | ..... |
| July 24.... | McLennan, C. C.. | 56 | 223 | 1.28 | 101.54 | 286 | ..... |
| Oct. 11.... | Campbell, L. L. . | 56 | 184 | .73 | 100.83 | 135 | ..... |

(a) Ice along edges of river, above and below section.
(b) Ice on both sides of river.
(c) Frazile ice at section. Sides of section frozen.
(d) Section almost entirely ice covered.

## Daily Gauge Height and Discharge of York River near Bancroft for 1915-6

Drainage Area, 374 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 101.33 | 234 | 101.40 | 248 | 101.49 | 186 | 102.12 | 266 | 102.67 | 368 | 105.25 | 1220 | 107.00 | 1730 | 103.59 | 735 | 101.65 | 298 | 101.51 | 270 | 101.31 | 230 | 100.67 | 113 |
| 2 | 101.31 | 230 | 101.40 | 248 | 101.60 | 200 | 102.11 | 262 | 102.53 | 344 | 105.48 | 1290 | 107.00 | 1730 | 103.58 | 735 | 101.65 | 298 | 101.50 | 268 | 101.31 | 230 | 100.79 | 133 |
| 3 | 101.25 | 219 | 101.35 | 238 | 101.52 | 186 | 102.18 | 274 | 102.56 | 352 | 105.43 | 1280 | 107.00 | 1730 | 103.35 | 670 | 101.62 | 292 | 101.44 | 256 | 101.31 | 230 | 100.88 | 149 |
| 4 | 101.29 | 226 | 101.35 | 238 | 101.73 | 224 | 102.20 | 278 | 102.61 | 362 | 105.41 | 1270 | 106.83 | 1680 | 103.25 | 650 | 101.63 | 294 | 101.38 | 246 | 101.32 | 232 | 100.88 | 149 |
| 5 | 101.29 | 226 | 101.33 | 234 | 101.52 | 196 | 102.10 | 258 | 102.46 | 338 | 105.33 | 1250 | 106.67 | 1640 | 103.31 | 660 | 101.61 | 290 | 101.35 | 238 | 101.35 | 238 | 100.92 | 157 |
| 6 | 101.28 | 224 | 101.33 | 234 | 101.56 | 200 | 102.06 | 248 | 103.48 | 560 | 105.05 | 1170 | 106.25 | 1520 | 103.54 | 720 | 101.58 | 284 | 101.38 | 246 | 101.32 | 232 | 100.92 | 157 |
| 7 | 101.28 | 224 | 101.30 | 228 | 101.65 | 217 | 102.10 | 258 | 103.50 | 560 | 105.00 | 1150 | 106.08 | 1460 | 103.21 | 640 | 101.59 | 286 | 101.35 | 238 | 101 29 | 226 | 100.88 | 149 |
| 8 | 101.28 | 224 | 101.30 | 228 | 101.96 | 250 | 102.27 | 268 | 103.32 | 560 | 105.00 | 1150 | 103.42 | 690 | 102.84 | 550 | 101.59 | 286 | 101.33 | 234 | 101.16 | 201 | 100.88 | 149 |
| 9 | 101.27 | 222 | 101.31 | 230 | 102.02 | 262 | 102.28 | 282 | 103.34 | 575 | 105.04 | 1160 | 102.59 | 491 | 102.83 | 550 | 101.58 | 284 | 101.33 | 234 | 101.20 | 209 | 100.96 | 164 |
| 10 | 101.26 | 221 | 101.44 | 256 | 102.04 | 266 | 102.33 | 298 | 103.48 | 590 | 104.95 | 1130 | 102.60 | 493 | 102.84 | 550 | 101.54 | 276 | 101.35 | 238 | 101.15 | 200 | 100.94 | 160 |
| 11 | 191.29 | 226 | 101.68 | 304 | 101.96 | 256 | 102.50 | 328 | 102.49 | 590 | 105.02 | 1160 | 102.75 | 525 | 102.85 | 550 | 101.58 | 284 | 101.40 | 248 | 101.17 | 203 | 100.92 | 157 |
| 12 | 101.29 | 226 | 101.66 | 300 | 102.00 | 260 | 102.49 | 328 | 102.89 | 540 | 105.33 | 1250 | 102.56 | 485 | 102.75 | 525 | 101.40 | 248 | 101.40 | 248 | 101.22 | 213 | 100.92 | 157 |
| 13 | 101.26 | 221 | 101.39 | 246 | 102.04 | 264 | 102.49 | 328 | 102.71 | 493 | 105.67 | 1340 | 103.08 | 605 | 102.70 | 515 | 101.44 | 256 | 101.41 | 250 | 101.28 | 224 | 100.92 | 157 |
| 14 | 101.12 | 194 | 101.60 | 288 | 102.08 | 268 | 103.12 | 466 | 102.95 | 540 | 105.92 | 1420 | 103.87 | 815 | 102.60 | 493 | 101.38 | 244 | 101.40 | 248 | 101.27 | 222 | 100.92 | 157 |
| 15 | 101.25 | 219 | 101.80 | 328 | 102.17 | 288 | 103.24 | 493 | 103.07 | 605 | 106.02 | 1450 | 103.92 | 830 | 102.65 | 505 | 101.44 | 256 | 101.33 | 234 | 101.26 | 220 | 100.91 | 155 |
| 16 | 101.25 | 119 | 101.88 | 344 | 102.17 | 290 | 103.00 | 443 | 104.74 | 1070 | 106.06 | 1460 | 103.94 | 835 | 102.73 | 520 | 101.42 | 252 | 101.33 | 234 | 101.24 | 217 | 100.92 | 157 |
| 17 | 101.27 | 222 | 101.82 | 332 | 102.25 | 306 | 102.88 | 417 | 104.57 | 1020 | 106.35 | 1540 | 104.29 | 940 | 102.81 | 540 | 101.50 | 268 | 101.33 | 234 | 101.24 | 217 | 109.92 | 157 |
| 18 | 101.19 | 207 | 101.83 | 334 | 102.27 | 308 | 102.77 | 392 | 104.41 | 970 | 106.42 | 1570 | 104.87 | 1110 | 102.82 | 545 | 101.48 | 264 | 101.33 | 234 | 101.24 | 217 | 100.92 | 157 |
| 19 | 101.25 | 219 | 101.36 | 240 | 102.32 | 318 | 102.80 | 396 | 104.33 | 955 | 106.33 | 1540 | 105.08 | 1170 | 102.79 | 540 | 101.48 | 264 | 101.33 | 234 | 101.24 | 217 | 101.04 | 179 |
| 20 | 101.32 | 232 | 101.35 | 234 | 102.31 | 316 | 102.94 | 430 | 104.94 | 1130 | 106.21 | 1510 | 105.33 | 1250 | 102.83 | 550 | 101.47 | 262 | 101.33 | 234 | 101.25 | 220 | 101.09 | 188 |
| 21 | 101.34 | 236 | 101.33 | 224 | 102.31 | 316 | 103.06 | 449 | 105.54 | 1300 | 106.17 | 1490 | 105.21 | 1210 | 103.15 | 620 | 101.51 | 270 | 101.33 | 234 | 101.25 | 220 | 101.19 | 207 |
| 22 | 101.35 | 238 | 101.39 | 232 | 102.33 | 316 | 102.94 | 434 | 104.44 | 980 | 106.17 | 1490 | 105.17 | 1200 | 103.01 | 590 | 101.57 | 282 | 101.33 | 234 | 101.25 | 220 | 101.12 | 190 |
| 23 | 161.33 | 234 | 101.36 | 220 | 102.35 | 318 | 102.68 | 374 | 104.34 | 955 | 106.21 | 1500 | 105.08 | 1170 | 102.71 | 520 | 101.55 | 278 | 101.33 | 234 | 101.25 | 220 | 101.08 | 186 |
| 24 | 101.31 | 230 | 101.33 | 205 | 102.39 | 318 | 102.43 | 320 | 104.31 | 950 | 106.17 | 1490 | 105.08 | 1170 | 102.46 | 463 | 101.56 | 280 | 101.35 | 238 | 101.24 | 217 | 101.06 | 182 |
| 25 | 101.31 | 230 | 101.38 | 205 | 102.40 | 324 | 102.48 | 334 | 104.17 | 905 | 106.75 | 1660 | 105.04 | 1160 | 102.33 | 436 | 101.53 | 274 | 101.33 | 234 | 101.25 | 220 | 101.04 | 179 |
| 26 | 101.29 | 226 | 101.38 | 203 | 102.43 | 332 | 102.47 | 330 | 104.13 | 895 | 107.00 | 1730 | 102.62 | 497 | 102.29 | 428 | 101.56 | 280 | 101.33 | 234 | 101.25 | 220 | 101.04 | 179 |
| 27 | 101.29 | 226 | 101.40 | 203 | 102.44 | 333 | 102.46 | 326 | 104.12 | 890 | 107.00 | 1730 | 102.64 | 500 | 102.21 | 411 | 101.52 | 272 | 101.33 | 234 | 101.22 | 213 | 101.04 | 179 |
| 28 | 101.32 | 232 | 101.40 | 200 | 102.29 | 308 | 102.68 | 368 | 104.23 | 925 | 107.00 | 1730 | 102.81 | 540 | 102.12 | 390 | 101.55 | 274 | 101.33 | 234 | 101.08 | 186 | 101.04 | 179 |
| 29 | 101.46 | 260 | 101.49 | 205 | 102.21 | 290 | 102.65 | 364 | 104.29 | 940 | 107.00 | 1730 | 102.75 | 525 | 102.12 | 390 | 101.54 | 276 | 101.33 | 234 | 101.06 | 182 | 101.04 | 179 |
| 30 | 101.48 | 264 | 101.63 | 228 | 102.12 | 273 | ..... | ..... | 104.44 | 980 | 107.00 | 1730 | 102.75 | 525 | 101.79 | 326 | 101.52 | 272 | 101.32 | 232 | 101.04 | 179 | 101.04 | 179 |
| 31 | ..... | ..... | 101.67 | 234 | 102.25 | 294 | ..... | ..... | 104.73 | 1070 | ..... | ..... | 103.67 | 760 | ..... | ..... | 101.52 | 272 | 101.30 | 228 | ..... | ..... | 101.04 | 179 |

## Monthly Discharge of York River near Bancroft for 1915-6

Drainage Area 374 square miles

| Month. | Discharge in Second-feet. | | | Discharge in Second-feet, per square mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 264 | 194 | 227 | .71 | .52 | .60 | .67 |
| December " | 344 | 200 | 248 | .92 | .53 | .66 | .76 |
| January ..(1916) | 338 | 186 | 274 | .90 | .50 | .73 | .84 |
| February ..... | 493 | 248 | 345 | 1.32 | .66 | .92 | .99 |
| March..... | 1,300 | 338 | 752 | 3.48 | .90 | 2.01 | 2.32 |
| April ..... | 1,730 | 1,130 | 1,420 | 4.63 | 3.02 | 3.80 | 4.24 |
| May..... | 1,730 | 485 | 1,000 | 4.63 | 1.30 | 2.67 | 3.08 |
| June ..... | 735 | 326 | 544 | 1.97 | .87 | 1.45 | 1.62 |
| July..... | 298 | 244 | 275 | .80 | .65 | .74 | .85 |
| August..... | 270 | 228 | 240 | .72 | .61 | .64 | .74 |
| September..... | 238 | 179 | 216 | .64 | .48 | .58 | .65 |
| October..... | 207 | 113 | 165 | .55 | .30 | .44 | .51 |
| The year ..... | 1,730 | 113 | 475 | 4.63 | .30 | 1.27 | 17.29 |

## Regular Stations

### NORTHERN ONTARIO DISTRICT

| River | Location | Drainage Area Sq. Miles | Township | District |
|---|---|---|---|---|
| aux Sables | at Massey | 524 | Salter | Sudbury |
| Blanche | near Englehart | 230 | Evanturel | Timiskaming |
| Frederickhouse | at Frederickhouse | 1,252 | Clute | " |
| Kagawong | at Kagawong | 94 | Allan | Manitoulin Island |
| Maganetawan, North. | near Burk's Falls | 107 | Armour | Parry Sound |
| " South. | " " " | 257 | " | " |
| Mississagi | at Irou Bridge | 3,565 | Gladstone | Algoma |
| Muskoka, N. Branch. | near Port Sydney | 560 | Stephenson | Muskoka |
| Muskoka, S. Branch. | at Tretheway's Falls | 668 | Draper | " |
| Seguin | near Parry Sound | 380 | McDougall | Parry Sound |
| South | near Powassan | 294 | Himsworth | Parry Sound |
| Spanish | at Espanola | 4,490 | Merritt | Sudbury |
| Sturgeon | at Smoky Falls | 2,250 | Field | Nipissing |
| Vermilion | near Whitefish | 1,580 | Graham | Sudbury |
| Wanapitei | at McVitties | | Secord | " |

## aux Sables River at Massey

**Location**—About 800 feet upstream from C.P. Ry bridge, and ¼ mile north-east of railway station, in the Village of Massey, Township of Salter, Sudbury District.

**Records Available**—Discharge measurements from August, 1914, to October, 1916. Daily gauge heights from June 10, 1915, to October 31, 1916.

**Drainage Area**—524 square miles.

**Gauge**—Vertical steel staff with enamelled face, graduated in feet and inches, fastened to rock on left shore 400 feet above railway bridge. Zero of the gauge (elev. 15.00 feet) is referred to bench mark (elev. 29.76 feet) painted on top of rock near gauge.

**Channel and Control**—Straight for 1,000 feet above and 500 feet below the gauging station to a rapid. Both banks are high, rocky, wooded, and are not liable to overflow. The bed of the stream is composed of clay and gravel, practically permanent. The velocity is moderate, and one channel exists at all stages.

**Discharge Measurements**—Made by wading during low water periods. At high stages measurements are made from boat with a Price current meter.

**Regulation**—The operation of logging dams above cause fluctuations in gauge heights during the log-driving season.

**Observer**—Jas. Blight, Massey.

### Discharge Measurements of aux Sables River at Massey in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 20, .... | Murray, W. S. | 96 | 392 | 1.91 | 20.33 | 752 | ..... |
| Dec. 6 .... | " .. | 95 | 578 | 1.95 | 21.70 | 1,129 (a) | ..... .... |
| 1916 | | | | | | | |
| Feb. 4. .... | " .. | 75 | 154 | 2.55 | 18.04 | 393 (b) | ... ... .... |
| Mar. 9 .... | " .. | 77 | 127 | 2.27 | 17.25 | 287 (b) | ..... ..... |
| Apr. 14 .... | " .. | 96 | 963 | 2.32 | 26.40 | 2,241 (c) | ..... .... |
| May 11 .... | " .. | 97 | 822 | 2.15 | 24.20 | 1,772 | ..... |

(a) Ice on control.
(b) Ice measurement.
(c) River rising rapidly.

## Daily Gauge Height and Discharge of aux Sables River at Massey for 1915-6

**Drainage Area 524 Square Miles**

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 18.29 | 434 | 22.62 | 1330 | 16.58 | 228 | 18.66 | 390 | 17.66 | 349 | 21.41 | 1040 | 27.82 | 2580 | 22.33 | 1260 | 26.54 | 2270 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 2 | 18.50 | 465 | 22.50 | 1300 | 16.58 | 228 | 18.83 | 390 | 17.58 | 340 | 24.00 | 1660 | 27.32 | 2460 | 23.46 | 1530 | 26.54 | 2270 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 3 | 18.50 | 465 | 22.62 | 1330 | 16.58 | 228 | 18.04 | 390 | 17.50 | 330 | 26.00 | 2140 | 27.20 | 2430 | 26.04 | 2150 | 26.54 | 2270 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 4 | 18.37 | 445 | 22.39 | 1270 | 16.58 | 228 | 18.00 | 390 | 17.50 | 330 | 26.00 | 2140 | 26.37 | 2230 | 26.04 | 2150 | 26.54 | 2270 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 5 | 18.29 | 434 | 21.66 | 1100 | 16.58 | 228 | 18.00 | 390 | 17.33 | 310 | 26.00 | 2140 | 26.42 | 2240 | 26.04 | 2150 | 26.54 | 2270 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 6 | 18.16 | 414 | 21.54 | 1070 | 21.70 | 390 | 18.00 | 390 | 17.33 | 310 | 25.50 | 2020 | 26.00 | 2140 | 26.04 | 2150 | 26.54 | 2270 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 7 | 18.16 | 414 | 21.45 | 1050 | 20.62 | 390 | 18.00 | 390 | 17.33 | 310 | 25.40 | 2000 | 25.33 | 1980 | 25.62 | 2050 | 26.54 | 2270 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 8 | 18.08 | 402 | 21.29 | 1010 | 19.91 | 390 | 18.00 | 390 | 17.33 | 310 | 25.00 | 1900 | 24.79 | 1850 | 24.79 | 1850 | 22.62 | 1330 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 9 | 18.16 | 414 | 21.16 | 798 | 19.16 | 390 | 18.00 | 390 | 17.33 | 310 | 24.70 | 1830 | 24.91 | 1880 | 24.33 | 1740 | 21.95 | 1170 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 10 | 18.25 | 428 | 20.87 | 911 | 19.08 | 390 | 18.00 | 390 | 17.33 | 310 | 25.04 | 1910 | 25.16 | 1940 | 24.12 | 1690 | 21.95 | 1170 | 16.04 | 179 | 15.04 | 112 | 17.37 | 314 |
| 11 | 18.33 | 440 | 18.16 | 414 | 19.08 | 390 | 18.00 | 390 | 17.33 | 310 | 25.37 | 1990 | 24.70 | 1830 | 24.04 | 1670 | 21.95 | 1170 | 16.04 | 179 | 15.04 | 112 | 17.45 | 324 |
| 12 | 18.45 | 458 | 18.00 | 390 | 19.08 | 390 | 18.00 | 390 | 17.33 | 310 | 25.70 | 2070 | 25.00 | 1900 | 24.04 | 1670 | 21.54 | 1070 | 16.04 | 179 | 15.62 | 148 | 17.57 | 338 |
| 13 | 19.66 | 662 | 18.00 | 390 | 19.08 | 390 | 18.00 | 390 | 17.33 | 310 | 26.12 | 2170 | 24.70 | 1830 | 24.42 | 1760 | 21.12 | 970 | 16.04 | 179 | 16.12 | 186 | 17.57 | 338 |
| 14 | 20.16 | 762 | 17.83 | 370 | 19.08 | 390 | 18.66 | 405 | 17.66 | 349 | 26.62 | 2290 | 25.04 | 1910 | 24.79 | 1850 | 20.75 | 885 | 16.04 | 179 | 16.50 | 220 | 17.57 | 338 |
| 15 | 20.33 | 796 | 17.62 | 344 | 19.08 | 390 | 18.66 | 420 | 17.66 | 349 | 27.20 | 2430 | 25.25 | 1960 | 24.98 | 1900 | 20.62 | 855 | 16.04 | 179 | 16.87 | 257 | 17.54 | 335 |
| 16 | 20.62 | 856 | 17.37 | 314 | 19.08 | 390 | 18.66 | 435 | 17.66 | 349 | 27.20 | 2430 | 25.12 | 1930 | 25.25 | 1960 | 20.79 | 895 | 16.04 | 179 | 17.04 | 275 | 17.54 | 335 |
| 17 | 20.62 | 856 | 17.16 | 289 | 19.08 | 390 | 18.58 | 450 | 17.58 | 340 | 27.58 | 2520 | 24.95 | 1890 | 25.37 | 1990 | 20.04 | 740 | 16.04 | 179 | 17.20 | 294 | 18.04 | 396 |
| 18 | 20.50 | 830 | 16.83 | 253 | 19.08 | 390 | 18.50 | 465 | 17.58 | 340 | 28.11 | 2650 | 24.87 | 1870 | 28.61 | 2770 | 18.91 | 525 | 16.04 | 179 | 17.16 | 289 | 18.33 | 440 |
| 19 | 20.37 | 804 | 19.16 | 568 | 19.08 | 390 | 18.29 | 433 | 17.50 | 330 | 28.36 | 2710 | 24.66 | 1820 | 28.61 | 2770 | 18.37 | 445 | 16.04 | 179 | 17.12 | 284 | 19.29 | 590 |
| 20 | 20.29 | 788 | 18.95 | 533 | 19.08 | 390 | 18.29 | 433 | 17.50 | 330 | 28.57 | 2760 | 24.96 | 1890 | 28.61 | 2770 | 17.95 | 384 | 16.04 | 179 | 16.91 | 261 | 19.62 | 655 |
| 21 | 20.37 | 804 | 18.75 | 503 | 19.08 | 390 | 18.04 | 396 | 17.41 | 319 | 29.07 | 2880 | 23.79 | 1610 | 28.40 | 2720 | 17.70 | 354 | 16.04 | 179 | 16.87 | 257 | 20.12 | 755 |
| 22 | 20.25 | 780 | 18.58 | 477 | 19.08 | 390 | 18.00 | 390 | 17.37 | 314 | 30.03 | 3110 | 23.70 | 1590 | 28.28 | 2690 | 17.20 | 294 | 15.50 | 140 | 16.87 | 257 | 20.12 | 755 |
| 23 | 20.16 | 762 | 18.66 | 489 | 19.00 | 390 | 18.00 | 390 | 17.37 | 314 | 30.36 | 3190 | 23.79 | 1610 | 28.15 | 2660 | 17.20 | 294 | 15.75 | 158 | 16.87 | 257 | 21.04 | 950 |
| 24 | 20.08 | 746 | 18.55 | 473 | 19.00 | 390 | 18.00 | 390 | 17.37 | 314 | 30.36 | 3190 | 24.04 | 1670 | 27.99 | 2620 | 17.12 | 284 | 15.70 | 154 | 16.87 | 257 | 22.04 | 1190 |
| 25 | 19.95 | 720 | 18.33 | 440 | 19.00 | 390 | 18.00 | 390 | 17.37 | 314 | 39.36 | 3190 | 24.04 | 1670 | 27.65 | 2540 | 16.95 | 265 | 15.66 | 151 | 16.87 | 257 | 22.54 | 1310 |
| 26 | 19.79 | 688 | 16.58 | 228 | 19.00 | 390 | 18.00 | 390 | 17.33 | 310 | 30.36 | 3190 | 24.04 | 1670 | 27.45 | 2490 | 16.83 | 253 | 15.54 | 143 | 16.87 | 257 | 23.16 | 1460 |
| 27 | 19.75 | 680 | 16.58 | 228 | 19.00 | 390 | 17.87 | 374 | 17.62 | 344 | 30.36 | 3190 | 23.54 | 1550 | 27.70 | 2550 | 16.70 | 240 | 15.54 | 143 | 16.91 | 261 | 23.70 | 1590 |
| 28 | 23.16 | 1460 | 16.58 | 228 | 19.00 | 390 | 17.75 | 360 | 18.49 | 463 | 30.03 | 3110 | 22.50 | 1300 | 26.95 | 2370 | 16.66 | 236 | 15.45 | 137 | 16.99 | 269 | 24.37 | 1750 |
| 29 | 23.16 | 1460 | 16.58 | 228 | 19.00 | 390 | 17.66 | 349 | 18.99 | 538 | 29.44 | 2970 | 21.70 | 1110 | 26.83 | 2340 | 16.54 | 224 | 15.33 | 130 | 17.08 | 280 | 24.95 | 1890 |
| 30 | 23.00 | 1420 | 16.58 | 228 | 19.08 | 390 | ..... | ..... | 19.08 | 554 | 29.03 | 2870 | 21.79 | 1130 | 26.59 | 2280 | 16.37 | 208 | 15.20 | 122 | 17.12 | 284 | 25.20 | 1950 |
| 31 | ..... | ..... | 16.58 | 228 | 18.91 | 390 | ..... | ..... | 20.54 | 837 | ..... | ..... | 22.03 | 1190 | ..... | .... | 16.08 | 182 | 15.08 | 115 | ..... | ..... | 25.20 | 1950 |

## Monthly Discharge of aux Sables River at Massey for 1915-6

Drainage Area 524 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 1,460 | 402 | 703 | 2.78 | .77 | 1.34 | 1.50 |
| December " | 1,330 | 228 | 606 | 2.54 | .44 | 1.16 | 1.34 |
| January .. (1916) | 390 | 228 | 364 | .74 | .44 | .69 | .80 |
| February..... | 465 | 349 | 398 | .89 | .67 | .76 | .82 |
| March..... | 835 | 310 | 359 | 1.59 | .59 | .69 | .80 |
| April ..... | 3,190 | 1,040 | 2,454 | 6.08 | 1.98 | 4.68 | 5.22 |
| May..... | 2,580 | 1,110 | 1,828 | 4.92 | 2.12 | 3.49 | 4.02 |
| June..... | 2,770 | 1,260 | 2,170 | 5.29 | 2.40 | 4.14 | 4.62 |
| July..... | 2,270 | 182 | 978 | 4.33 | .35 | 1.87 | 2.16 |
| August..... | 179 | 115 | 166 | .34 | .22 | .32 | .37 |
| September ..... | 294 | 112 | 203 | .56 | .21 | .39 | .44 |
| October ..... | 1,950 | 314 | 735 | 3.72 | .60 | 1.40 | 1.61 |
| The year ..... | 3,190 | 112 | 911 | 6.08 | .21 | 1.74 | 23.70 |

## Blanche River near Englehart

Location—At the highway bridge near the High Falls, 3½ miles north-west of the Town of Englehart, north half of lot 12, concession 3, Township of Evanturel, Temiskaming District.

Records Available—Discharge measurements, August, 1914, to October, 1916. Daily gauge heights, October 8, 1914, to October 31, 1916.

Drainage Area—430 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and located on the southwest corner of the wing wall of the bridge. The zero on the gauge (elev. 10.00) is referred to a bench mark (elev. 23.39), painted on a prominent rock on the right bank, 75 feet below the bridge.

Channel—At a point 200 feet above the station, the river curves from the right and then flows straight, up to a point 700 feet below the station. Both banks are high, rocky, wooded, and will not overflow. The bed of the stream is composed of clay, practically permanent. The current is very slow, flowing through 2 channels at low stages and 3 channels during high water periods.

Discharge Measurements—Made from the highway bridge with a Price current meter.

Regulation—A temporary dam is built above the station during the summer months. This dam is used for storing water during the period when the river is used for log driving. The gauge heights at the section are therefore affected during the log driving periods.

Winter Flow—During the winter months measurements are made through the ice to determine the winter discharge. The relation of gauge height to discharge is seriously affected by ice.

Accuracy—Rating curve fairly well defined between gauge heights 10.50 feet and 12.00 feet.

Observer—Roy Robinson, Englehart.

### Discharge Measurements of Blanche River near Englehart in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 25, .... | Murray, W. S.. | 97 | 640 | .52 | 10.75 | 334 | ..... |
| 1916 | | | | | | | |
| Jan. 22, .... | " .. | 72 | 560 | .50 | 10.66 | 280(a) | ..... |
| April 18 .... | " .. | 116 | 1,122 | 2.51 | 15.42 | 2,811 | ..... .. . |
| May 2 .... | " .. | ..... | 1,284 | 3.06 | 16.50 | 3,936 | ..... |
| June 13 .... | " .. | 90 | 627 | .47 | 10.58 | 295 | ..... ... |
| July 8 .... | " .. | 88 | 613 | .45 | 10.39 | 276 | ..... |
| Sept. 4 .... | " .. | 91 | 603 | .43 | 10.37 | 259 | ..... .... |
| Oct. 4 .... | " .. | 91 | 614 | .43 | 10.25 | 263 | ..... .... |

(a) Ice measurement.

# Daily Gauge Height and Discharge of Blanche River near Englehart for 1915-6

Drainage Area, 430 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 11.26 | 460 | 10.91 | 372 | 10.50 | 270 | 10.20 | 200 | 10.12 | 184 | 12.00 | 680 | 15.75 | 3120 | ..... | 312 | 10.58 | 290 | 10.46 | 260 | 10.33 | 228 | 10.25 | 210 |
| 2 | 11.25 | 458 | 11.00 | 395 | 10.50 | 270 | 10.08 | 176 | 10.08 | 176 | 12.04 | 690 | 15.50 | 2900 | ..... | 315 | 10.62 | 300 | 10.41 | 248 | 10.39 | 242 | 10.25 | 210 |
| 3 | 11.33 | 479 | 12.83 | 1020 | 10.50 | 270 | 10.12 | 184 | 10.08 | 176 | 12.00 | 680 | 15.50 | 2900 | ..... | 318 | 10.66 | 310 | 10.41 | 248 | 10.25 | 210 | 10.25 | 210 |
| 4 | 11.16 | 435 | 12.83 | 1020 | 10.33 | 228 | 10.08 | 176 | 10.08 | 176 | 12.33 | 800 | 15.33 | 2750 | ..... | 322 | 10.75 | 332 | 10.37 | 238 | 10.29 | 218 | 10.25 | 210 |
| 5 | 11.25 | 458 | 12.75 | 975 | 10.25 | 210 | 10.16 | 192 | 10.08 | 176 | 12.75 | 975 | 15.08 | 2520 | ..... | 327 | 10.71 | 322 | 10.33 | 228 | 10.33 | 228 | 10.25 | 210 |
| 6 | 11.00 | 395 | 12.83 | 1020 | 10.33 | 228 | 10.16 | 192 | 10.16 | 192 | 12.91 | 1060 | 14.66 | 2180 | 10.75 | 332 | 10.66 | 310 | 10.39 | 242 | 10.33 | 228 | 10.25 | 210 |
| 7 | 11.00 | 395 | 12.83 | 1020 | 10.25 | 210 | 10.13 | 186 | 10.20 | 200 | 13.00 | 1100 | 14.66 | 2180 | 10.76 | 335 | 10.75 | 332 | 10.50 | 270 | 10.33 | 228 | 10.25 | 210 |
| 8 | 10.91 | 372 | 12.75 | 975 | 10.25 | 210 | 10.08 | 176 | 10.25 | 210 | 13.33 | 1300 | 14.33 | 1930 | 10.83 | 352 | 10.71 | 322 | 10.41 | 248 | 10.25 | 210 | 10.25 | 210 |
| 9 | 10.83 | 352 | 12.66 | 935 | 10.33 | 228 | 10.12 | 184 | 10.25 | 210 | 13.50 | 1400 | 13.91 | 1650 | 10.91 | 372 | 10.41 | 248 | 10.37 | 238 | 10.25 | 210 | 10.27 | 214 |
| 10 | 10.91 | 372 | 12.58 | 900 | 10.25 | 210 | 10.08 | 176 | 10.20 | 200 | 13.33 | 1300 | 13.79 | 1570 | 10.66 | 310 | 10.37 | 238 | 10.41 | 248 | 10.23 | 206 | 10.27 | 214 |
| 11 | 11.00 | 395 | 12.66 | 935 | 10.25 | 210 | 10.16 | 192 | 10.29 | 218 | 12.00 | 680 | 13.62 | 1470 | 10.66 | 310 | 10.46 | 260 | 10.62 | 300 | 10.16 | 192 | 10.27 | 214 |
| 12 | 10.83 | 352 | 12.66 | 935 | 10.16 | 192 | 10.16 | 192 | 10.25 | 210 | 11.83 | 630 | 13.33 | 1300 | 10.75 | 332 | 10.39 | 242 | 10.58 | 290 | 10.25 | 210 | 10.27 | 214 |
| 13 | 10.91 | 372 | 12.50 | 870 | 10.16 | 192 | 10.16 | 192 | 10.29 | 218 | 11.66 | 580 | 13.16 | 1200 | 10.58 | 290 | 10.37 | 238 | 10.54 | 280 | 10.16 | 192 | 10.27 | 214 |
| 14 | 11.00 | 395 | 12.41 | 835 | 10.08 | 176 | 10.12 | 184 | 10.75 | 332 | 11.75 | 605 | 12.91 | 1060 | 10.62 | 300 | 10.33 | 228 | 10.58 | 290 | 10.21 | 202 | 10.25 | 210 |
| 15 | 11.16 | 435 | 12.33 | 800 | 10.12 | 184 | 10.12 | 184 | 10.66 | 310 | 11.66 | 580 | 12.50 | 870 | 10.50 | 270 | 10.25 | 210 | 10.54 | 280 | 10.25 | 210 | 10.25 | 210 |
| 16 | 11.08 | 415 | 12.08 | 705 | 10.08 | 176 | 10.20 | 200 | 10.71 | 322 | 12.58 | 900 | 12.83 | 1020 | 10.58 | 290 | 10.29 | 218 | 10.50 | 270 | 10.25 | 210 | 10.25 | 210 |
| 17 | 11.00 | 395 | 12.00 | 680 | 10.16 | 192 | 10.16 | 192 | 10.66 | 310 | 13.70 | 1520 | 13.00 | 1100 | 10.62 | 300 | 10.33 | 228 | 10.46 | 260 | 10.25 | 210 | 10.29 | 218 |
| 18 | 10.91 | 372 | 11.91 | 655 | 10.16 | 192 | 10.12 | 184 | 10.62 | 300 | 15.42 | 2830 | 12.91 | 1060 | 10.66 | 310 | 10.37 | 238 | 10.43 | 252 | 10.21 | 202 | 10.29 | 218 |
| 19 | 11.00 | 395 | 11.83 | 630 | 10.08 | 176 | 10.08 | 176 | 10.58 | 290 | 15.00 | 2450 | 12.83 | 1020 | 10.58 | 290 | 10.41 | 248 | 10.41 | 248 | 10.16 | 192 | 10.29 | 218 |
| 20 | 11.08 | 415 | 11.75 | 605 | 10.38 | 240 | 10.12 | 184 | 10.62 | 300 | 15.33 | 2750 | 12.79 | 995 | 10.62 | 300 | 10.46 | 260 | 10.41 | 248 | 10.21 | 202 | 10.29 | 218 |
| 21 | 11.00 | 395 | 11.66 | 580 | 10.56 | 285 | 10.08 | 176 | 10.66 | 310 | 15.50 | 2900 | 12.75 | 975 | 10.66 | 310 | 10.41 | 248 | 10.37 | 238 | 10.25 | 210 | 10.29 | 218 |
| 22 | 10.91 | 372 | 11.66 | 580 | 10.66 | 310 | 10.16 | 192 | 10.62 | 300 | 16.00 | 3350 | 12.66 | 935 | 10.62 | 300 | 10.37 | 238 | 10.37 | 238 | 10.41 | 248 | 11.16 | 435 |
| 23 | 10.83 | 352 | 11.50 | 530 | 10.25 | 210 | 10.16 | 192 | 10.62 | 300 | 17.50 | 4850 | 12.50 | 870 | 10.66 | 310 | 10.37 | 238 | 10.33 | 228 | 10.41 | 248 | 11.16 | 435 |
| 24 | 10.91 | 372 | 11.41 | 505 | 10.25 | 210 | 10.12 | 184 | 10.58 | 290 | 17.00 | 4350 | 12.25 | 770 | 10.58 | 290 | 10.33 | 228 | 10.41 | 248 | 10.39 | 242 | 11.16 | 435 |
| 25 | 11.00 | 395 | 11.33 | 480 | 10.25 | 210 | 10.08 | 176 | 10.62 | 300 | 19.60 | 6950 | 12.66 | 935 | 10.62 | 300 | 10.33 | 228 | 10.37 | 238 | 10.35 | 232 | 11.16 | 435 |
| 26 | 10.83 | 352 | 11.25 | 480 | 10.16 | 192 | 10.08 | 176 | 10.70 | 320 | 20.00 | 7350 | 11.00 | 395 | 10.66 | 310 | 10.41 | 248 | 10.33 | 228 | 10.30 | 220 | 11.16 | 435 |
| 27 | 10.83 | 352 | 11.16 | 435 | 10.12 | 184 | 10.12 | 184 | 10.75 | 332 | 20.00 | 7350 | 11.50 | 530 | 10.71 | 322 | 10.46 | 260 | 10.20 | 200 | 10.30 | 220 | 11.16 | 435 |
| 28 | 10.91 | 372 | 10.91 | 372 | 10.16 | 192 | 10.25 | 210 | 11.00 | 395 | 19.40 | 6750 | 10.91 | 372 | 10.75 | 332 | 10.41 | 248 | 10.16 | 192 | 10.29 | 218 | 11.16 | 435 |
| 29 | 11.00 | 395 | 10.75 | 332 | 10.20 | 200 | 10.33 | 228 | 10.95 | 382 | 17.00 | 4350 | 10.75 | 332 | 10.71 | 322 | 10.37 | 238 | 10.33 | 228 | 10.29 | 218 | 11.16 | 435 |
| 30 | 11.00 | 395 | 10.71 | 322 | 10.12 | 184 | ..... | ..... | 11.04 | 405 | 16.50 | 3850 | 10.75 | 332 | 10.66 | 310 | 10.41 | 248 | 10.25 | 210 | 10.25 | 210 | 11.16 | 435 |
| 31 | ..... | ..... | 10.50 | 270 | 10.16 | 192 | ..... | ..... | 11.58 | 555 | ..... | ..... | 10.66 | 310 | ..... | .... | 10.51 | 272 | 10.37 | 238 | ..... | ..... | 11.16 | 435 |

## Monthly Discharge of Blanche River near Englehart for 1915-6

Drainage Area, 430 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November.(1915) | 479 | 352 | 396 | 1.11 | .82 | .90 | 1.00 |
| December " | 1,020 | 270 | 682 | 2.37 | .63 | 1.59 | 1.83 |
| January .. (1916) | 285 | 176 | 214 | .66 | .41 | .50 | .58 |
| February ..... | 228 | 176 | 188 | .53 | .41 | .44 | .48 |
| March ..... | 555 | 176 | 277 | 1.29 | .41 | .64 | .74 |
| April ..... | 7,350 | 580 | 2,519 | 17.09 | 1.35 | 5.86 | 6.54 |
| May ..... | 3,120 | 310 | 1,340 | 7.26 | .72 | 3.12 | 3.60 |
| June ..... | 372 | 270 | 313 | .87 | .63 | .73 | .81 |
| July ..... | 332 | 210 | 260 | .77 | .49 | .60 | .69 |
| August ..... | 300 | 192 | 247 | .70 | .45 | .57 | .66 |
| September ..... | 248 | 192 | 217 | .58 | .45 | .50 | .56 |
| October ..... | 435 | 210 | 285 | 1.01 | .49 | .66 | .76 |
| The year ..... | 7,350 | 176 | 577 | 17.09 | .41 | 1.34 | 18.24 |

## Frederickhouse River at Frederickhouse

Location—On the T.C. Ry, bridge at the Frederickhouse station, Township of Clute, Sudbury District, 6 miles west of the Town of Cochrane.

Records Available—Discharge measurements from July, 1915, to October, 1916. Daily gauge heights from July 7, 1915, to October 31, 1916.

Drainage Area—1,260 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and fastened to downstream side of right abutment. Zero of gauge (elev. 9.00 feet) is referred to a bench mark (elev. 10.00 feet) on top of base of same abutment, to which gauge is attached.

Channel and Control—The channel is straight and consists of a number of rapids for about 1 mile above and below the station. The banks are high and wooded, and not liable to overflow. The bed of the stream is composed of clay and boulders, and is shifting. The velocity is high.

Discharge Measurements—Made from bridge with a Price current meter.

Regulation—Temporary dams on river above used for log driving cause fluctuations at gauge.

Observer—Frank Prior, Frederickhouse.

### Discharge Measurements of Frederickhouse River at Frederickhouse in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 26.... | Murray, W. S.. | 185 | 657 | 4.28 | 11.93 | 2,814 | ..... |
| Dec. 10.... | " .. | 190 | 463 | 3.69 | 10.91 | 1,711(a) | ..... |
| 1916 | | | | | | | |
| May 3.... | " .. | 190 | 1,246 | 10.87 | 15.00 | 12,202(b) | ..... |
| June 14.... | " .. | 190 | 478 | 4.47 | 10.96 | 2,145 | ..... |
| July 9.... | " .. | 190 | 430 | 3.67 | 10.69 | 1,577 | ..... |
| " 9.... | " .. | ..... | ..... | ..... | 10.69 | 1,235(c) | ..... |

(a) Section partly ice-covered.
(b) Coefficient applied to calculated discharge.
(c) Measurement two miles above regular section.

## Daily Gauge Height and Discharge of Frederickhouse River at Frederickhouse for 1915-6

Drainage Area 1,260 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 11.56 | 2410 | 11.14 | 1910 | 12.91 | 1860 | 13.33 | 2220 | 11.75 | 1860 | 11.33 | 2140 | 14.66 | 10110 | 11.75 | 2640 | 11.16 | 1930 | ..... | 880 | 9.58 | 280 | 9.62 | 320 |
| 2 | 11.56 | 2410 | 11.12 | 1880 | 12.91 | 1860 | 13.33 | 2200 | 11.66 | 1860 | 11.33 | 2140 | 14.83 | 10800 | 11.66 | 2530 | 11.25 | 2040 | ..... | 860 | 9.58 | 280 | 9.58 | 280 |
| 3 | 11.56 | 2410 | 11.10 | 1860 | 12.95 | 1860 | 13.33 | 2160 | 11.58 | 1800 | 11.33 | 2140 | 15.00 | 11500 | 11.62 | 2480 | 11.25 | 2040 | ..... | 840 | 9.58 | 280 | 9.58 | 280 |
| 4 | 11.52 | 2360 | 11.08 | 1840 | 13.00 | 1960 | 13.33 | 2160 | 11.50 | 1750 | 11.33 | 2140 | 15.00 | 11500 | 11.62 | 2480 | 11.25 | 2040 | ..... | 820 | 9.58 | 280 | 9.58 | 280 |
| 5 | 11.50 | 2340 | 11.02 | 1770 | 13.02 | 1980 | 13.33 | 2160 | 11.41 | 1750 | 11.33 | 2140 | 15.00 | 11500 | 11.58 | 2440 | 11.16 | 1930 | ..... | 800 | 9.58 | 270 | 9.58 | 280 |
| 6 | 11.48 | 2320 | 11.00 | 1750 | 13.04 | 1980 | 13.33 | 2160 | 11.41 | 1750 | 11.33 | 2140 | 14.91 | 11130 | 11.54 | 2390 | 11.16 | 1930 | ..... | 780 | 9.62 | 320 | 9.58 | 280 |
| 7 | 11.45 | 2280 | 10.97 | 1720 | 13.06 | 1920 | 13.33 | 2160 | 11.41 | 1750 | 11.33 | 2140 | 14.91 | 11130 | 11.50 | 2340 | 11.16 | 1930 | ..... | 760 | 9.62 | 320 | 9.58 | 280 |
| 8 | 11.47 | 2300 | 10.95 | 1700 | 12.91 | 1980 | 13.31 | 2160 | 11.41 | 1750 | 11.33 | 2140 | 14.91 | 11130 | 11.45 | 2280 | 11.25 | 2040 | ..... | 740 | 9.60 | 300 | 9.58 | 280 |
| 9 | 11.54 | 2390 | 10.93 | 1670 | 13.08 | 1980 | 13.31 | 2160 | 11.37 | 1750 | 11.33 | 2140 | 14.87 | 10970 | 11.37 | 2180 | 11.16 | 1930 | ..... | 720 | 9.58 | 280 | 9.58 | 280 |
| 10 | 11.52 | 2360 | 10.91 | 1650 | 13.12 | 2020 | 13.29 | 2200 | 11.37 | 1750 | 11.37 | 2180 | 14.87 | 10970 | 11.33 | 2140 | 11.12 | 1880 | ..... | 700 | 9.58 | 280 | 9.58 | 280 |
| 11 | 11.50 | 2340 | 10.95 | 1700 | 13.12 | 1980 | 13.29 | 2180 | 11.35 | 1750 | 11.37 | 2180 | 14.87 | 10970 | 11.29 | 2090 | 11.12 | 1880 | ..... | 680 | 9.58 | 280 | 9.58 | 280 |
| 12 | 11.45 | 2280 | 11.06 | 1720 | 13.12 | 1980 | 13.25 | 2160 | 11.33 | 1750 | 11.41 | 2230 | 14.87 | 10970 | 11.25 | 2040 | 11.08 | 1840 | ..... | 660 | 9.58 | 280 | 9.58 | 280 |
| 13 | 11.37 | 2180 | 11.12 | 1710 | 13.12 | 1980 | 13.16 | 2120 | 11.33 | 1750 | 11.46 | 2290 | 14.91 | 11130 | 11.21 | 1990 | 11.08 | 1840 | ..... | 640 | 9.62 | 320 | 9.58 | 280 |
| 14 | 11.37 | 2180 | 11.21 | 1710 | 13.14 | 1920 | 13.08 | 2100 | 11.33 | 1750 | 11.33 | 2140 | 14.83 | 10800 | 11.16 | 1930 | 11.04 | 1790 | ..... | 620 | 9.83 | 330 | 9.58 | 280 |
| 15 | 11.37 | 2180 | 11.29 | 1690 | 13.08 | 1990 | 13.00 | 2100 | 11.33 | 1750 | 11.58 | 2440 | 14.75 | 10470 | 11.12 | 1880 | 10.83 | 1560 | ..... | 600 | 9.83 | 330 | 9.58 | 280 |
| 16 | 11.37 | 2180 | 11.39 | 1690 | 13.20 | 2060 | 12.91 | 2100 | 11.33 | 1750 | 11.75 | 2640 | 14.66 | 10110 | 11.08 | 1840 | 10.91 | 1650 | ..... | 580 | 9.83 | 330 | 9.60 | 300 |
| 17 | 11.37 | 2180 | 11.52 | 1690 | 13.25 | 2100 | 12.83 | 2100 | 11.33 | 1750 | 11.91 | 2830 | 14.58 | 9780 | 11.08 | 1840 | 10.75 | 1470 | ..... | 560 | 9.78 | 480 | 9.58 | 280 |
| 18 | 11.33 | 2140 | 11.58 | 1690 | 13.29 | 2160 | 12.75 | 2100 | 11.33 | 1750 | 12.00 | 2940 | 14.58 | 9780 | 11.12 | 1880 | 10.66 | 1380 | ..... | 540 | 9.70 | 400 | 9.58 | 280 |
| 19 | 11.33 | 2140 | 11.75 | 1710 | 13.29 | 2160 | 12.58 | 2100 | 11.29 | 1750 | 12.16 | 3150 | 14.58 | 9780 | 11.16 | 1930 | 10.58 | 1290 | ..... | 520 | 9.66 | 360 | 9.58 | 280 |
| 20 | 11.33 | 2140 | 11.91 | 1720 | 13.31 | 2100 | 12.50 | 2100 | 11.29 | 1750 | 12.41 | 3520 | 14.83 | 10800 | 11.16 | 1930 | 10.50 | 1200 | ..... | 500 | 9.62 | 320 | 9.58 | 280 |
| 21 | 11.29 | 2090 | 12.12 | 1730 | 13.33 | 2160 | 12.41 | 2080 | 11.25 | 1750 | 12.66 | 3920 | 14.00 | 7400 | 11.16 | 1930 | 10.41 | 1110 | ..... | 480 | 9.58 | 280 | 9.62 | 320 |
| 22 | 11.25 | 2040 | 12.27 | 1720 | 13.16 | 2160 | 12.33 | 2070 | 11.20 | 1750 | 12.58 | 3790 | 13.66 | 6280 | 11.16 | 1930 | ..... | 1080 | ..... | 460 | 9.58 | 280 | 9.77 | 470 |
| 23 | 11.20 | 1980 | 12.39 | 1710 | 13.33 | 2160 | 12.25 | 2040 | 11.16 | 1750 | 12.91 | 4370 | 13.50 | 5750 | 11.16 | 1930 | ..... | 1050 | ..... | 440 | 9.58 | 280 | 9.83 | 530 |
| 24 | 11.16 | 1930 | 12.50 | 1710 | 13.33 | 2160 | 12.16 | 2080 | 11.12 | 1750 | 13.16 | 4930 | 13.16 | 4930 | 11.16 | 1930 | ..... | 1020 | ..... | 420 | 9.58 | 280 | 9.91 | 610 |
| 25 | 11.12 | 1880 | 12.69 | 1690 | 13.33 | 2180 | 12.66 | 2100 | 11.12 | 1750 | 13.50 | 5750 | 12.83 | 4220 | 11.16 | 1930 | ..... | 1000 | ..... | 400 | 9.58 | 280 | 9.91 | 610 |
| 26 | 11.08 | 1840 | 12.83 | 1730 | 13.37 | 2180 | 12.08 | 2160 | 11.12 | 1750 | 13.83 | 6840 | 12.50 | 3660 | 11.25 | 2040 | ..... | 980 | ..... | 380 | 9.58 | 280 | 10.08 | 780 |
| 27 | 11.16 | 1930 | 12.91 | 1690 | 13.37 | 2180 | 12.00 | 1980 | 11.12 | 1750 | 13.83 | 6840 | 12.50 | 3660 | 11.25 | 2040 | ..... | 960 | ..... | 360 | 9.58 | 280 | 10.16 | 860 |
| 28 | 11.16 | 1930 | 12.91 | 1750 | 13.37 | 2180 | 11.91 | 1920 | 11.12 | 1800 | 13.91 | 7100 | 12.25 | 3280 | 11.16 | 1930 | ..... | 940 | ..... | 340 | 9.58 | 280 | 10.21 | 910 |
| 29 | 11.16 | 1930 | 12.91 | 1800 | 13.33 | 2180 | 11.83 | 1920 | 11.16 | 1930 | 13.83 | 6840 | 12.16 | 3150 | 11.16 | 1930 | ..... | 920 | ..... | 320 | 9.62 | 320 | 10.21 | 910 |
| 30 | 11.16 | 1930 | 12.91 | 1840 | 13.33 | 2220 | ..... | ..... | 11.25 | 2040 | 14.50 | 9450 | 12.08 | 3040 | 11.16 | 1930 | ..... | 900 | ..... | 300 | 9.66 | 360 | 10.25 | 950 |
| 31 | ..... | ..... | 12.91 | 1910 | 13.33 | 2220 | ..... | ..... | 11.33 | 2140 | ..... | ..... | 11.91 | 2830 | ..... | ..... | ..... | 900 | ..... | 280 | ..... | ..... | 10.25 | 950 |

## Monthly Discharge of Frederickhouse River at Frederickhouse for 1915-6

Drainage Area, 1,260 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November. (1915) | 2,410 | 1,840 | 2,167 | 1.91 | 1.46 | 1.72 | 1.92 |
| December " | 1,910 | 1,650 | 1,744 | 1.52 | 1.31 | 1.38 | 1.59 |
| January .. (1916) | 2,220 | 1,860 | 2,060 | 1.76 | 1.48 | 1.63 | 1.88 |
| February ..... | 2,220 | 1,920 | 2,112 | 1·76 | 1.52 | 1,68 | 1.81 |
| March ..... | 2,140 | 1,750 | 1,788 | 1.70 | 1.38 | 1.42 | 1.64 |
| April..... | 9,450 | 2,140 | 3,588 | 7.50 | 1.70 | 2.85 | 3.18 |
| May ..... | 11,500 | 2,830 | 8,501 | 9.13 | 2.25 | 6.75 | 7.28 |
| June..... | 2,640 | 1.840 | 2,092 | 2.09 | 1.46 | 1.66 | 1.85 |
| July..... | 2,040 | 900 | 1,498 | 1.62 | .71 | 1.19 | 1.37 |
| August..... | 880 | 280 | 580 | .70 | .22 | .46 | .53 |
| September ..... | 530 | 280 | 328 | .42 | .22 | .26 | .29 |
| October..... | 950 | 280 | 437 | .75 | .22 | .35 | .40 |
| The year ..... | 11,500 | 280 | 2,244 | 9.13 | .22 | 1.78 | 24.24 |

## Kagawong River at Kagawong

Location—150 feet below Kagawong Falls in the Village of Kagawong, Township of Billings, Manitoulin Island.

Records Available—Discharge measurements from July, 1915, to October, 1916. Daily gauge heights from July 11, 1915, to October 31, 1916.

Drainage Area—94 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, connected to a 2 x 4 scantling and attached to a large rock in stream 20 feet below the gauging station. Zero of the gauge (elev. 10.00 feet) is referred to a bench mark (elev. 15.86 feet) painted on a rock on right bank at the gauging station. The initial point for soundings is located on an iron post on the left bank opposite the bench mark.

Channel—Straight for about 100 feet above and below the gauging station. Both banks are high and wooded, and are not liable to overflow. The bed of the stream is composed of rock and clay, slightly shifting, one channel existing at all stages.

Discharge Measurements—Made by wading with a small Price current meter.

Regulation—The flow is controlled by the dam 200 feet above the falls.

Accuracy—The daily gauge readings have heretofore been taken before the mill opens and after it closes, so that the estimates of daily discharge made from the mean daily gauge reading are very much too low.

Observer—Stuart Hunt, Kagawong.

### Discharge Measurements of Kagawong River at Kagawong in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 18 .. | Murray, W. S.. | 21 | 14 | 3.80 | 11.20 | 53 | ..... |
| 1916 | | | | | | | |
| June 6 .... | " .. | 22 | 27 | 3.82 | 11.58 | 103 | ..... |
| " 6 .... | " .. | 22 | 23 | 3.19 | 11.41 | 73 | ..... |
| Oct. 17 .... | " .. | 22 | 31 | 1.61 | 11.25 | 49(a) | ..... |

(a) Section has been somewhat improved since previous measurement.

# Daily Gauge Height and Discharge of Kagawong River at Kagawong for 1915-6

Drainage Area, 94 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 11.00 | 32 | 10.75 | 18 | 11.00 | 32 | 11.33 | 62 | 12.20 | 110 | 11.92 | 175 | 12.25 | 245 | 11.75 | 140 | 11.58 | 104 | 11.08 | 38 | 11.08 | 38 | 10.91 | 27 |
| 2 | 11.00 | 32 | 10.75 | 18 | 11.00 | 32 | 11.54 | 96 | 11.83 | 116 | 12.00 | 192 | 12.15 | 245 | 11.75 | 140 | 11.41 | 74 | 11.08 | 38 | 11.08 | 38 | 11.00 | 32 |
| 3 | 11.00 | 32 | 11.25 | 53 | 10.83 | 22 | 11.24 | 52 | 11.75 | 118 | 12.00 | 192 | 12.25 | 245 | 11.66 | 121 | 11.58 | 104 | 11.08 | 38 | 11.00 | 32 | 10.95 | 29 |
| 4 | 11.00 | 32 | 10.77 | 18 | 10.83 | 22 | 11.20 | 48 | 12.37 | 121 | 12.16 | 226 | 12.25 | 245 | 11.50 | 88 | 11.49 | 86 | 11.08 | 38 | 11.00 | 32 | 10.83 | 22 |
| 5 | 11.00 | 32 | 10.77 | 18 | 10.83 | 22 | 11.33 | 48 | 11.91 | 125 | 12.16 | 226 | 12.25 | 245 | 11.66 | 121 | 11.41 | 74 | 11.08 | 38 | 11.00 | 32 | 10.83 | 22 |
| 6 | 11.00 | 32 | 10.79 | 20 | 11.29 | 57 | 11.29 | 47 | 11.83 | 72 | 12.16 | 226 | 12.25 | 245 | 11.41 | 74 | 11.41 | 74 | 11.08 | 38 | 11.00 | 32 | 10.91 | 27 |
| 7 | 10.70 | 15 | 10.79 | 20 | 12.08 | 53 | 11.20 | 47 | 11.66 | 48 | 12.20 | 234 | 12.08 | 209 | 11.58 | 104 | 11.49 | 86 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 8 | 10.87 | 24 | 10.79 | 20 | 12.16 | 48 | 11.29 | 47 | 11.45 | 48 | 12.20 | 234 | 12.16 | 226 | 11.58 | 104 | 11.49 | 86 | 11.00 | 32 | 11.04 | 35 | 10.91 | 27 |
| 9 | 10.76 | 18 | 10.79 | 20 | 11.16 | 45 | 11.33 | 44 | 11.49 | 46 | 12.16 | 226 | 12.16 | 226 | 11.58 | 104 | 11.41 | 74 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 10 | 10.66 | 13 | 10.79 | 20 | 10.83 | 22 | 11.33 | 44 | 11.45 | 40 | 12.20 | 234 | 12.12 | 217 | 11.58 | 104 | 11.41 | 74 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 11 | 10.87 | 24 | 10.79 | 20 | 11.00 | 32 | 11.54 | 44 | 11.33 | 40 | 12.16 | 226 | 12.16 | 226 | 11.41 | 74 | 11.41 | 74 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 12 | 10.83 | 22 | 10.87 | 24 | 11.04 | 35 | 11.37 | 42 | 11.33 | 40 | 12.33 | 261 | 12.16 | 226 | 11.58 | 104 | 11.41 | 74 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 13 | 10.62 | 11 | 10.91 | 27 | 11.00 | 32 | 12.04 | 42 | 11.41 | 53 | 12.20 | 234 | 12.16 | 226 | 11.58 | 104 | 11.41 | 74 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 14 | 10.62 | 11 | 10.96 | 30 | 11.50 | 88 | 12.91 | 41 | 11.54 | 40 | 12.25 | 245 | 12.00 | 192 | 11.58 | 104 | 11.41 | 74 | 11.00 | 32 | 11.00 | 32 | 10.87 | 24 |
| 15 | 10.62 | 11 | 11.08 | 38 | 11.20 | 48 | 11.83 | 40 | 11.37 | 40 | 12.33 | 261 | 12.16 | 226 | 11.58 | 104 | 11.41 | 74 | 11.00 | 32 | 11.08 | 38 | 10.87 | 22 |
| 16 | 10.62 | 11 | 11.25 | 53 | 11.08 | 38 | 11.41 | 40 | 11.33 | 40 | 12.25 | 245 | 12.08 | 209 | 11.58 | 104 | 11.41 | 74 | 11.00 | 32 | 11.08 | 38 | 10.91 | 27 |
| 17 | 10.62 | 11 | 11.00 | 32 | 11.00 | 32 | 11.31 | 40 | 11.37 | 40 | 12.33 | 261 | 12.16 | 226 | 11.58 | 104 | 11.41 | 74 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 18 | 11.16 | 45 | 10.75 | 18 | 11.00 | 32 | 11.10 | 40 | 11.33 | 40 | 12.33 | 261 | 12.16 | 226 | 11.41 | 74 | 11.41 | 74 | 11.00 | 32 | 10.91 | 27 | 10.91 | 27 |
| 19 | 11.16 | 45 | 10.75 | 18 | 11.16 | 36 | 11.16 | 40 | 11.33 | 40 | 12.33 | 261 | 12.16 | 226 | 11.58 | 104 | 11.16 | 45 | 11.00 | 32 | 10.91 | 27 | 10.91 | 27 |
| 20 | 11.16 | 45 | 10.79 | 20 | 11.08 | 38 | 11.29 | 40 | 11.33 | 40 | 12.25 | 245 | 11.91 | 173 | 11.58 | 104 | 11.08 | 38 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 21 | 10.66 | 13 | 10.77 | 18 | 11.08 | 38 | 11.45 | 40 | 11.33 | 40 | 12.25 | 245 | 11.83 | 156 | 11.58 | 104 | 11.08 | 38 | 11.04 | 35 | 11.00 | 32 | 10.91 | 27 |
| 22 | 10.66 | 13 | 11.00 | 32 | 11.12 | 42 | 11.58 | 40 | 11.33 | 40 | 12.33 | 261 | 12.00 | 192 | 11.58 | 104 | 11.00 | 32 | 11.08 | 38 | 11.00 | 32 | 10.83 | 22 |
| 23 | 10.66 | 13 | 10.79 | 20 | 11.08 | 38 | 11.37 | 40 | 11.33 | 40 | 12.16 | 226 | 12.00 | 192 | 11.58 | 104 | 11.00 | 32 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 24 | 10.67 | 14 | 10.79 | 20 | 11.12 | 42 | 11.12 | 42 | 11.41 | 40 | 12.33 | 261 | 12.00 | 192 | 11.41 | 74 | 11.08 | 38 | 11.00 | 32 | 10.91 | 27 | 10.91 | 27 |
| 25 | 10.69 | 15 | 10.79 | 20 | 11.16 | 45 | 11.37 | 68 | 11.37 | 44 | 12.33 | 261 | 12.00 | 192 | 11.41 | 74 | 11.08 | 38 | 11.08 | 38 | 11.00 | 32 | 10.91 | 27 |
| 26 | 10.71 | 16 | 10.83 | 22 | 11.16 | 45 | 11.37 | 68 | 11.41 | 74 | 12.33 | 261 | 12.00 | 192 | 11.58 | 104 | 11.16 | 45 | 11.08 | 38 | 11.00 | 32 | 10.91 | 27 |
| 27 | 10.75 | 18 | 10.83 | 22 | 11.75 | 140 | 11.58 | 104 | 11.50 | 88 | 12.16 | 226 | 12.00 | 192 | 11.50 | 88 | 11.08 | 38 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 28 | 10.73 | 16 | 10.83 | 22 | 11.41 | 74 | 12.50 | 108 | 11.74 | 137 | 12.16 | 226 | 11.83 | 156 | 11.58 | 104 | 11.08 | 38 | 11.04 | 35 | 11.00 | 32 | 10.91 | 27 |
| 29 | 10.75 | 18 | 10.83 | 22 | 11.25 | 53 | 12.04 | 110 | 11.91 | 173 | 12.25 | 245 | 11.83 | 156 | 11.58 | 104 | 11.08 | 38 | 11.04 | 35 | 11.00 | 32 | 10.83 | 22 |
| 30 | 11.25 | 53 | 11.08 | 38 | 11.25 | 53 | ..... | ..... | 11.91 | 173 | 12.16 | 226 | 11.83 | 156 | 11.58 | 104 | 11.08 | 38 | 11.00 | 32 | 11.00 | 32 | 10.91 | 27 |
| 31 | ..... | ..... | 10.41 | 3 | 11.25 | 53 | ..... | ..... | 11.91 | 173 | ..... | .... | 11.75 | 140 | ..... | ..... | 11.08 | 38 | 11.00 | 32 | ..... | ..... | 10.91 | 27 |

## Monthly Discharge of Kagawong River at Kagawong for 1915-6

Drainage Area 94 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in inches on Drainage Area |
| November (1915). | 53 | 11 | 23 | .56 | .12 | .24 | .27 |
| December .. | 53 | 3 | 24 | .56 | .03 | .26 | .30 |
| January ..(1916). | 140 | 22 | 45 | 1.49 | .23 | .48 | .55 |
| February ..... | 110 | 40 | 54 | 1.17 | .43 | .57 | .61 |
| March..... | 73 | 40 | 74 | 1.84 | .43 | .79 | .91 |
| April . ..... | 261 | 175 | 237 | 2.78 | 1.86 | 2.51 | 2.80 |
| May..... | 245 | 140 | 207 | 2.61 | 1.49 | 2.20 | 2.54 |
| June ..... | 140 | 74 | 101 | 1.49 | .79 | 1.07 | 1.19 |
| July..... | 104 | 32 | 62 | 1.11 | .34 | .66 | .76 |
| August ..... | 38 | 32 | 34 | .40 | .34 | .36 | .42 |
| September..... | 38 | 27 | 32 | .40 | .29 | .34 | .38 |
| October ..... | 32 | 22 | 26 | .34 | .23 | .28 | .32 |
| The year ..... | 261 | 3 | 76 | 2.78 | .03 | .81 | 11.02 |

## Maganetawan River (North Branch) Near Burk's Falls

**Location**—One mile north of Burk's Falls station, 200 feet upstream from the Grand Trunk Railway bridge, on lot 7, concession 10, Township of Armour, District of Parry Sound.

**Records Available**—Monthly discharge measurements from June, 1915, to October, 1916. Daily gauge readings from August 1, 1915, to October 31, 1916.

**Drainage Area**—107 square miles.

**Gauge**—Vertical steel staff with enamelled face fastened to a 2 x 4 scantling and connected to a wooden platform on the right shore 20 feet above gauging station. Zero of the gauge (elev. 27.09 feet) is referred to a bench mark (elev. 35.00 feet) painted on top of 5-ft. iron pipe 20 feet above gauging station.

**Channel and Control**—Straight for about 200 feet above and 100 feet below the gauging station to the falls. The banks are high and wooded, and are not liable to overflow. The bed of the stream is composed of clay and a few rocks, practically permanent. The velocity is moderate.

**Discharge Measurements**—Made by wading with a small Price current meter.

**Accuracy**—The rating curve is fairly well defined between limits, for which gauge height records are available.

**Observer**—Henry Stroud, Burk's Falls.

### Discharge Measurements of Maganetawan River (North Branch) near Burk's Falls in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 10, .... | Murray, W. S. .. | 47 | 99 | 1.41 | 29.64 | 140 | ..... |
| 1916 | | | | | | | |
| Jan. 17, .... | " .... | 40 | 68 | 1.60 | 29.77 | 109 (a) | ..... |
| Feb. 15 .... | " .... | 49 | 91 | 2.19 | 30.34 | 199 (a) | ..... |
| Mar. 13 .... | " .... | 46 | 80 | 1.41 | 29.88 | 114 (a) | ..... |
| Apl. 12 .... | " .... | 60 | 197 | 3.25 | 31.54 | 642 (b) | ..... |
| May 15 .... | " .... | 60 | 182 | 2.44 | 31.00 | 444 | ..... |
| June 20 .... | " ..... | 55 | 139 | 2.01 | 30.42 | 280 | ..... |
| Aug. 30 .... | " ..... | 36 | 50 | .50 | 25.70 | 26 | ..... |
| Oct. 11 .... | " ..... | 38 | 72 | 1.09 | 29.42 | 78 | ..... |

(a) Ice measurement.
(b) Logs on control.

## Daily Gauge Height and Discharge of Maganetawan River (North Branch) near Burk's Falls for 1915-6

Drainage Area, 107 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 29.84 | 168 | 30.25 | 262 | 29.50 | 100 | 31.17 | 520 | 29.96 | 134 | 31.50 | 620 | 31.67 | 670 | 30.63 | 358 | 30.09 | 199 | 29.09 | 44 | 28.75 | 26 | 29.46 | 82 |
| 2 | 29.75 | 150 | 30.34 | 285 | 29.50 | 100 | 31.17 | 520 | 29.84 | 114 | 31.91 | 760 | 31.59 | 640 | 30.67 | 370 | 30.09 | 199 | 29.00 | 38 | 28.79 | 27 | 29.42 | 77 |
| 3 | 29.71 | 142 | 30.34 | 285 | 29.50 | 100 | 31.17 | 520 | 29.75 | 88 | 32.09 | 820 | 31.59 | 640 | 30.75 | 392 | 30.04 | 186 | 28.96 | 36 | 28.80 | 27 | 29.42 | 77 |
| 4 | 29.75 | 150 | 30.34 | 285 | 29.50 | 100 | 31.17 | 520 | 29.67 | 82 | 32.67 | 1020 | 31.59 | 640 | 31.00 | 466 | 30.00 | 176 | 28.92 | 33 | 28.92 | 33 | 29.42 | 77 |
| 5 | 29.67 | 134 | 30.29 | 272 | 29.63 | 126 | 31.09 | 497 | 29.75 | 88 | 32.67 | 1020 | 31.50 | 615 | 30.92 | 443 | 29.92 | 158 | 28.88 | 31 | 29.34 | 67 | 29.38 | 72 |
| 6 | 29.71 | 142 | 39.25 | 262 | 29.55 | 110 | 31.09 | 470 | 29.79 | 100 | 32.59 | 995 | 31.42 | 590 | 30.84 | 419 | 29.84 | 141 | 28.84 | 29 | 29.34 | 67 | 29.25 | 57 |
| 7 | 29.71 | 142 | 30.17 | 242 | 29.50 | 100 | 31.00 | 410 | 29.84 | 100 | 32.34 | 910 | 31.42 | 590 | 30.75 | 393 | 29.75 | 124 | 28.88 | 31 | 29.38 | 72 | 29.17 | 51 |
| 8 | 29.71 | 142 | 30.25 | 262 | 29.59 | 100 | 30.84 | 380 | 29.84 | 100 | 32.00 | 790 | 31.38 | 580 | 30.71 | 381 | 29.75 | 124 | 28.92 | 33 | 29.38 | 72 | 29.17 | 51 |
| 9 | 29.63 | 126 | 30.25 | 262 | 29.59 | 100 | 30.75 | 350 | 29.84 | 100 | 31.75 | 700 | 31.34 | 565 | 30.59 | 346 | 29.67 | 112 | 28.92 | 33 | 29.42 | 77 | 29.21 | 54 |
| 10 | 29.67 | 134 | 30.25 | 262 | 29.59 | 100 | 30.75 | 350 | 29.88 | 100 | 31.84 | 735 | 31.42 | 590 | 30.50 | 319 | 29.67 | 112 | 28.92 | 33 | 29.42 | 77 | 29.34 | 67 |
| 11 | 29.67 | 134 | 30.25 | 262 | 29.59 | 100 | 30.67 | 325 | 29.88 | 110 | 31.88 | 750 | 31.25 | 540 | 30.50 | 319 | 29.63 | 105 | 28.88 | 31 | 29.42 | 77 | 29.44 | 79 |
| 12 | 29.75 | 150 | 30.25 | 262 | 29.59 | 100 | 30.67 | 312 | 29.88 | 110 | 31.67 | 675 | 31.25 | 540 | 30.50 | 319 | 29.59 | 100 | 28.84 | 29 | 29.38 | 72 | 29.44 | 79 |
| 13 | 29.75 | 150 | 30.09 | 222 | 29.63 | 100 | 30.50 | 250 | 29.88 | 110 | 31.50 | 620 | 31.17 | 515 | 30.59 | 346 | 29.55 | 94 | 28.84 | 29 | 29.34 | 67 | 29.44 | 79 |
| 14 | 29.67 | 134 | 30.00 | 209 | 29.67 | 100 | 30.38 | 200 | 29.88 | 110 | 31.92 | 760 | 31.09 | 490 | 30.67 | 370 | 29.50 | 87 | 28.84 | 29 | 29.25 | 58 | 29.44 | 79 |
| 15 | 29.63 | 126 | 29.92 | 184 | 29.67 | 100 | 30.34 | 200 | 29.88 | 110 | 32.17 | 850 | 31.00 | 466 | 20.71 | 381 | 29.46 | 82 | 28.84 | 29 | 29.09 | 44 | 29.46 | 82 |
| 16 | 29.42 | 88 | 29.84 | 168 | 29.67 | 100 | 30.29 | 200 | 29.88 | 110 | 32.42 | 885 | 30.96 | 455 | 30.75 | 393 | 29.42 | 77 | 28.84 | 29 | 28.84 | 29 | 29.50 | 87 |
| 17 | 29.09 | 44 | 29.80 | 160 | 29.67 | 100 | 30.39 | 190 | 29.88 | 110 | 32.75 | 980 | 30.96 | 455 | 30.75 | 393 | 29.42 | 77 | 28.84 | 29 | 28.67 | 23 | 29.50 | 87 |
| 18 | 29.42 | 88 | 29.75 | 150 | 29.71 | 104 | 30.25 | 180 | 29.88 | 110 | 32.92 | 1030 | 30.96 | 455 | 30.75 | 393 | 29.34 | 67 | 28.84 | 29 | 28.75 | 26 | 29.59 | 100 |
| 19 | 29.67 | 134 | 29.75 | 150 | 29.75 | 110 | 30.25 | 180 | 29.88 | 110 | 33.17 | 1100 | 31.00 | 466 | 30.75 | 393 | 29.25 | 58 | 28.84 | 29 | 28.84 | 29 | 29.75 | 124 |
| 20 | 29.67 | 134 | 29.75 | 150 | 29.84 | 134 | 30.25 | 184 | 29.88 | 110 | 33.00 | 1050 | 31.04 | 478 | 30.42 | 295 | 29.17 | 51 | 28.84 | 29 | 29.00 | 38 | 29.92 | 158 |
| 21 | 29.67 | 134 | 29.67 | 134 | 29.92 | 130 | 30.25 | 184 | 29.79 | 100 | 32.67 | 955 | 31.09 | 490 | 30.59 | 346 | 29.30 | 63 | 28.84 | 29 | 29.09 | 44 | 30.67 | 370 |
| 22 | 29.67 | 134 | 29.59 | 118 | 30.42 | 250 | 30.25 | 184 | 29.75 | 100 | 32.75 | 980 | 31.09 | 490 | 30.59 | 346 | 29.38 | 72 | 28.84 | 29 | 30.09 | 199 | 30.75 | 392 |
| 23 | 29.67 | 134 | 29.59 | 118 | 30.38 | 250 | 30.25 | 184 | 29.71 | 100 | 32.54 | 920 | 31.09 | 490 | 30.50 | 319 | 29.34 | 67 | 28.82 | 28 | 30.09 | 199 | 30.80 | 407 |
| 24 | 29.75 | 150 | 29.59 | 118 | 30.38 | 250 | 30.17 | 170 | 29.71 | 100 | 33.09 | 1080 | 31.09 | 490 | 30.42 | 295 | 29.34 | 67 | 28.80 | 27 | 29.92 | 158 | 31.09 | 492 |
| 25 | 29.84 | 168 | 29.59 | 118 | 30.50 | 275 | 30.09 | 160 | 29.75 | 104 | 32.54 | 920 | 31.04 | 478 | 30.42 | 295 | 29.30 | 63 | 28.80 | 27 | 29.75 | 124 | 31.09 | 492 |
| 26 | 29.84 | 168 | 29.59 | 118 | 30.50 | 275 | 30.09 | 160 | 29.75 | 150 | 32.42 | 885 | 31.00 | 466 | 30.38 | 283 | 29.25 | 58 | 28.80 | 27 | 29.34 | 67 | 31.17 | 515 |
| 27 | 30.09 | 222 | 29.59 | 118 | 30.75 | 395 | 30.00 | 140 | 30.00 | 200 | 32.34 | 860 | 31.00 | 466 | 30.38 | 283 | 29.25 | 58 | 28.79 | 27 | 29.34 | 67 | 31.21 | 530 |
| 28 | 30.46 | 315 | 29.55 | 110 | 30.92 | 446 | 29.96 | 134 | 30.25 | 262 | 32.09 | 785 | 30.92 | 443 | 30.30 | 259 | 29.21 | 54 | 28.79 | 27 | 29.38 | 72 | 31.25 | 540 |
| 29 | 30.59 | 348 | 29.55 | 110 | 31.09 | 497 | 29.96 | 134 | 30.67 | 371 | 31.75 | 685 | 30.84 | 419 | 30.25 | 245 | 29.21 | 54 | 28.75 | 26 | 29.42 | 77 | 31.25 | 540 |
| 30 | 30.42 | 305 | 29.55 | 110 | 31.17 | 520 | ..... | ..... | 31.00 | 470 | 31.59 | 640 | 30.75 | 393 | 30.17 | 221 | 29.17 | 51 | 28.75 | 26 | 29.42 | 77 | 31.25 | 540 |
| 31 | ..... | ..... | 29.55 | 110 | 31.17 | 520 | ..... | ..... | 31.17 | 520 | ..... | ..... | 30.59 | 346 | ..... | ..... | 29.13 | 47 | 28.75 | 26 | ..... | ..... | 31.25 | 540 |

## Monthly Discharge of Maganetawan River (North Branch) near Burk's Falls for 1915-6

Drainage Area, 107 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915). | 348 | 44 | 166 | 3.25 | .44 | 1.55 | 1.73 |
| December .. | 285 | 110 | 189 | 2.66 | 1.03 | 1.77 | 2.04 |
| January ..(1916). | 520 | 100 | 190 | 4.86 | .93 | 1.78 | 2.05 |
| February ..... | 520 | 134 | 282 | 4.86 | 1.25 | 2.64 | 2.84 |
| March ..... | 520 | 82 | 148 | 4.86 | .77 | 1.38 | 1.59 |
| April..... | 1,100 | 620 | 859 | 10.28 | 5.79 | 8.03 | 8.96 |
| May..... | 670 | 346 | 515 | 6.26 | 3.23 | 4.81 | 5.55 |
| June ..... | 466 | 221 | 346 | 4.36 | 2.07 | 3.23 | 3.60 |
| July..... | 199 | 47 | 96 | 1.86 | .44 | .90 | 1.04 |
| August ..... | 44 | 26 | 30 | .41 | .24 | .28 | .32 |
| September ..... | 199 | 23 | 70 | 1.86 | .21 | .65 | .73 |
| October..... | 540 | 51 | 225 | 5.05 | .48 | 2.10 | 2.42 |
| The year ..... | 1,100 | 23 | 259 | 10.28 | .21 | 2.42 | 32.94 |

## Maganetawan River (South Branch) near Burk's Falls

**Location**—One-half mile south of Burk's Falls station, and 200 feet east of G.T. Ry. tracks on lot 8, concession 8, Township of Armour, Parry Sound District.

**Records Available**—Discharge measurements from June, 1915, to October, 1916. Daily gauge heights from August 1, 1915, to October 31, 1916.

**Drainage Area**—257 square miles.

**Gauge**—Vertical steel staff with enamelled face, graduated in feet and inches, fastened to 2 x 8 scantling wedged between two hardwood trees on the left shore 20 feet above gauging station. Zero of the gauge (elev. 22.00 feet) is referred to a bench mark (elev. 35.00 feet) painted on top of a 5-ft. iron pipe located near the gauge on the north branch of the river.

**Channel and Control**—Straight for about 250 feet above and 500 feet below the rapids. The banks are high and wooded, and are not liable to overflow. The current is moderate.

**Discharge Measurements**—Made by wading with a small price meter.

**Regulation**—Temporary dams above, which are used during log driving season, cause fluctuations at the gauge.

**Accuracy**—Rating curve fairly well defined between gauge heights 23.50 and 24.00 feet. There are not sufficient data available to define a good curve above and below these limits.

**Observer**—Henry Stroud, Burk's Falls.

### Discharge Measurements of Maganetawan River (South Branch) near Burk's Falls in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov, 10.... | Murray, W.S ... | 65 | 132 | 2.13 | 24.00 | 283 | ..... |
| 1916 | | | | | | | |
| Feb. 15.... | " .... | 70 | 178 | 3.06 | 24.70 | 546 (a) | ..... |
| Mar. 13.... | " .... | 67 | 126 | 2.34 | 23.92 | 294 (b) | ..... |
| April 5.... | " .... | 77 | 242 | 4.51 | 25.52 | 1,090 | ..... |
| May 15.... | " .... | 77 | 249 | 3.48 | 25.66 | 866 | ..... |
| June 20.... | " .... | 78 | 210 | 3.18 | 25.14 | 670 | ..... |
| Aug. 30.... | " .... | 62 | 81 | 1.74 | 23.37 | 142 | ..... |
| Oct. 11.... | " .... | 64 | 88 | 1.71 | 23.49 | 151 | ..... |

(a) River ice-covered above section.
(b) Floating ice at section.

## Daily Gauge Height and Discharge of Maganetawan River (South Branch) near Burk's Falls for 1915-6

Drainage Area 257 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 24.16 | 346 | 24.16 | 346 | 24.16 | 346 | 24.75 | 605 | 24.29 | 396 | 25.65 | 780 | 26.35 | 1610 | 25.37 | 815 | 25.00 | 685 | 23.25 | 114 | 23.41 | 151 | 23.66 | 229 |
| 2 | 24.12 | 332 | 24.20 | 360 | 24.12 | 332 | 24.83 | 645 | 24.16 | 346 | 25.16 | 825 | 26.25 | 1555 | 25.33 | 790 | 25.00 | 685 | 23.25 | 114 | 23.45 | 162 | 23.62 | 216 |
| 3 | 24.08 | 318 | 24.25 | 380 | 24.08 | 318 | 24.91 | 685 | 24.16 | 346 | 25.58 | 1085 | 26.25 | 1555 | 25.33 | 790 | 24.91 | 650 | 23.25 | 114 | 23.33 | 132 | 23.60 | 209 |
| 4 | 24.16 | 346 | 24.25 | 380 | 24.08 | 318 | 24.83 | 645 | 24.16 | 346 | 25.41 | 975 | 26.25 | 1555 | 25.37 | 815 | 24.83 | 625 | 23.25 | 114 | 23.41 | 151 | 23.58 | 202 |
| 5 | 24.08 | 318 | 24.25 | 380 | 24.37 | 428 | 24.83 | 645 | 24.16 | 346 | 25.62 | 1115 | 26.21 | 1525 | 25.33 | 790 | 24.75 | 600 | 23.25 | 114 | 23.33 | 132 | 23.58 | 202 |
| 6 | 24.00 | 290 | 24.20 | 360 | 24.37 | 428 | 24.87 | 665 | 24.16 | 346 | 25.66 | 1140 | 26.21 | 1525 | 25.25 | 770 | 24.66 | 570 | 23.25 | 114 | 23.33 | 132 | 23.58 | 202 |
| 7 | 24.08 | 318 | 24.25 | 380 | 24.58 | 520 | 24.91 | 685 | 24.16 | 346 | 25.71 | 1175 | 26.00 | 1380 | 25.25 | 770 | 24.58 | 540 | 23.29 | 123 | 23.33 | 132 | 23.54 | 189 |
| 8 | 24.08 | 318 | 24.25 | 380 | 24.42 | 448 | 24.83 | 645 | 24.16 | 346 | 25.75 | 1205 | 26.00 | 1380 | 25.21 | 755 | 24.58 | 540 | 23.33 | 132 | 23.33 | 132 | 23.54 | 189 |
| 9 | 24.00 | 290 | 24.25 | 380 | 24.37 | 428 | 24.83 | 645 | 24.00 | 290 | 25.66 | 1140 | 25.91 | 1315 | 25.21 | 755 | 24.54 | 530 | 23.33 | 132 | 23.33 | 132 | 23.50 | 176 |
| 10 | 24.00 | 290 | 24.25 | 380 | 24.00 | 290 | 24.83 | 645 | 24.04 | 304 | 25.71 | 1175 | 25.91 | 1315 | 25.25 | 770 | 24.50 | 515 | 23.33 | 132 | 23.33 | 132 | 23.50 | 176 |
| 11 | 24.00 | 290 | 24.33 | 412 | 24.00 | 290 | 24.75 | 605 | 23.95 | 278 | 25.79 | 1235 | 25.83 | 1260 | 25.25 | 770 | 24.46 | 500 | 23.33 | 132 | 23.33 | 132 | 23.48 | 171 |
| 12 | 24.08 | 318 | 24.33 | 412 | 24.08 | 318 | 24.66 | 560 | 23.91 | 268 | 25.83 | 1260 | 25.83 | 1260 | 25.21 | 755 | 24.41 | 483 | 23.33 | 132 | 23.33 | 132 | 23.50 | 176 |
| 13 | 24.02 | 297 | 24.25 | 380 | 24.00 | 290 | 24.70 | 580 | 23.91 | 268 | 25.83 | 1260 | 25.75 | 1205 | 25.25 | 770 | 24.37 | 470 | 23.37 | 141 | 23.33 | 132 | 23.50 | 176 |
| 14 | 24.00 | 290 | 24.16 | 346 | 24.00 | 290 | 24.75 | 605 | 23.91 | 268 | 26.00 | 1380 | 25.66 | 1140 | 25.21 | 755 | 24.33 | 457 | 23.45 | 162 | 23.33 | 132 | 23.50 | 176 |
| 15 | 24.00 | 290 | 24.16 | 346 | 24.08 | 318 | 24.75 | 605 | 23.91 | 268 | 26.08 | 1435 | 25.66 | 1140 | 25.29 | 780 | 24.33 | 457 | 23.45 | 162 | 23.41 | 151 | 23.50 | 176 |
| 16 | 24.00 | 290 | 24.16 | 346 | 24.08 | 318 | 24.66 | 560 | 23.91 | 268 | 26.08 | 1435 | 26.75 | 1270 | 25.37 | 815 | 24.37 | 470 | 23.52 | 183 | 23.50 | 176 | 23.54 | 189 |
| 17 | 23.95 | 278 | 24.12 | 332 | 24.16 | 346 | 24.67 | 565 | 23.87 | 258 | 26.25 | 1555 | 26.50 | 1190 | 25.37 | 815 | 24.37 | 470 | 23.54 | 189 | 23.62 | 216 | 23.58 | 202 |
| 18 | 24.00 | 290 | 24.08 | 318 | 24.16 | 346 | 24.62 | 540 | 23.83 | 249 | 26.33 | 1610 | 25.83 | 960 | 25.29 | 780 | 23.46 | 165 | 23.58 | 202 | 23.62 | 216 | 23.62 | 216 |
| 19 | 24.00 | 290 | 24.08 | 318 | 24.08 | 318 | 24.58 | 520 | 23.83 | 249 | 26.41 | 1665 | 25.83 | 960 | 25.25 | 770 | 23.46 | 165 | 23.54 | 189 | 23.58 | 202 | 23.75 | 260 |
| 20 | 24.00 | 290 | 24.08 | 318 | 24.00 | 290 | 24.62 | 540 | 23.83 | 249 | 26.33 | 1610 | 25.87 | 980 | 25.16 | 735 | 23.46 | 115 | 23.54 | 189 | 23.58 | 202 | 23.83 | 287 |
| 21 | 24.00 | 290 | 24.08 | 318 | 24.08 | 318 | 24.50 | 480 | 24.58 | 254 | 26.33 | 1610 | 26.16 | 1070 | 25.16 | 735 | 23.50 | 176 | 23.50 | 176 | 23.58 | 202 | 24.00 | 345 |
| 22 | 24.00 | 290 | 24.08 | 318 | 24.16 | 346 | 24.50 | 480 | 24.50 | 260 | 26.41 | 1665 | 26.50 | 1190 | 25.08 | 710 | 23.46 | 165 | 23.50 | 176 | 23.58 | 202 | 24.00 | 345 |
| 23 | 24.00 | 290 | 24.08 | 318 | 24.29 | 396 | 24.41 | 444 | 24.41 | 265 | 26.41 | 1665 | 26.33 | 1130 | 25.04 | 695 | 23.41 | 151 | 23.50 | 176 | 23.58 | 202 | 24.08 | 371 |
| 24 | 24.00 | 290 | 24.04 | 304 | 24.25 | 380 | 24.41 | 444 | 24.25 | 295 | 26.41 | 1665 | 26.00 | 1020 | 25.00 | 685 | 23.41 | 151 | 23.50 | 176 | 23.58 | 202 | 24.16 | 399 |
| 25 | 24.00 | 290 | 24.04 | 304 | 24.33 | 412 | 24.41 | 444 | 24.25 | 380 | 26.41 | 1665 | 25.91 | 990 | 25.00 | 685 | 23.41 | 151 | 23.50 | 176 | 23.58 | 202 | 24.33 | 457 |
| 26 | 24.00 | 290 | 24.08 | 318 | 24.33 | 412 | 24.33 | 412 | 24.29 | 396 | 26.37 | 1640 | 25.41 | 820 | 25.00 | 685 | 23.39 | 146 | 23.50 | 176 | 23.58 | 202 | 24.41 | 483 |
| 27 | 24.04 | 304 | 24.04 | 304 | 24.33 | 412 | 24.29 | 396 | 24.29 | 396 | 26.33 | 1610 | 25.33 | 790 | 25.00 | 685 | 23.33 | 132 | 23.50 | 176 | 23.58 | 202 | 24.66 | 555 |
| 28 | 24.08 | 318 | 24.12 | 332 | 24.50 | 480 | 24.29 | 396 | 24.33 | 412 | 26.33 | 1610 | 25.33 | 790 | 25.04 | 695 | 23.29 | 123 | 23.16 | 96 | 23.58 | 202 | 24.83 | 625 |
| 29 | 24.16 | 346 | 24.12 | 332 | 24.62 | 540 | 24.29 | 396 | 24.58 | 520 | 26.29 | 1585 | 25.37 | 815 | 25.00 | 685 | 23.27 | 118 | 23.25 | 114 | 23.62 | 216 | 24.91 | 650 |
| 30 | 24.08 | 318 | 24.12 | 332 | 24.66 | 560 | ..... | .... | 24.75 | 605 | 26.25 | 1555 | 25.41 | 820 | 25.00 | 685 | 23.25 | 114 | 23.33 | 132 | 23.66 | 229 | 25.08 | 710 |
| 31 | ..... | ..... | 24.16 | 346 | 24.66 | 560 | ..... | .... | 24.91 | 685 | ..... | ..... | 25.45 | 835 | ..... | ..... | 23.25 | 114 | 23.41 | 151 | ..... | ..... | 25.12 | 725 |

## Monthly Discharge of Maganetawan River (South Branch) near Burk's Falls for 1915-6

Drainage Area, 257 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915). | 346 | 278 | 304 | 1.35 | 1.08 | 1.18 | 1.32 |
| December. | 412 | 304 | 348 | 1.60 | 1.18 | 1.35 | 1.56 |
| January ..(1916). | 560 | 290 | 381 | 2.18 | 1.13 | 1.48 | 1.71 |
| February ..... | 685 | 396 | 555 | 2.67 | .54 | 2.16 | 2.33 |
| March..... | 685 | 249 | 339 | 2.67 | .97 | 1.32 | 1.52 |
| April..... | 1,665 | 780 | 1,379 | 6.48 | 3.04 | 5.37 | 5.99 |
| May..... | 1,610 | 790 | 1,173 | 6.26 | 3.07 | 4.56 | 5.26 |
| June ..... | 815 | 685 | 750 | 3.17 | 2.67 | 2.92 | 3.26 |
| July..... | 685 | 114 | 364 | 2.67 | .44 | 1.42 | 1.64 |
| August ..... | 202 | 96 | 149 | .78 | .37 | .58 | .67 |
| September..... | 229 | 132 | 171 | .89 | .51 | .67 | .75 |
| October..... | 725 | 171 | 312 | 2.82 | .67 | 1.21 | 1.39 |
| The year ..... | 1,665 | 132 | 517 | 6.48 | .51 | 2.01 | 27.36 |

## Mississagi River at Iron Bridge

Location—At highway bridge in the village of Iron Bridge, south half of lot 3, concession 2, Township of Gladstone, District of Algoma.

Records Available—Discharge measurements from September, 1915, to October, 1916. Daily gauge heights from November 16, 1915, to October 31, 1916.

Drainage Area—3,565 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches, 0 to 6 foot section placed on pile on left shore 350 feet down stream from bridge, 6 to 12 foot section placed on down stream side of right abutment of bridge. Zero on the gauge (elev. 32.00 feet) referred to bench mark (elev. 55.50 feet) on top of right abutment on down stream side, painted thus "B.M. 55.50."

Channel—Straight for about 300 feet above and about 1 mile below the gauging station. The bed of the stream consists of clay and sand, slightly shifting.

Discharge Measurements—Made from highway bridge with small Price current meter.

Control—About eleven miles below the gauging station there is a small falls and rapids known as the Mississagi rapids. Log jams sometimes occur on these rapids during low water period, which may cause back water at the gauging station.

Winter Flow—During the winter months measurements are made through the ice to determine the winter flow. The relation of gauge height to discharge is seriously affected by ice.

Observer—Lorne Arnill, Iron Bridge.

### Discharge Measurements of Mississagi River at Iron Bridge in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 16.... | Murray, W. S... | 177 | 3,117 | 2.09 | 36.09 | 6,515 | ..... |
| Dec. 3.... | " .... | 183 | 3,513 | 2.42 | 38.25 | 8,550 | ..... |
| 1916 | | | | | | | |
| Feb. 8.... | " .... | 170 | 2,705 | .94 | 33.50 | 2,520(a) | ..... |
| Mar. 8.... | " .... | 150 | 2,174 | .63 | 33.00 | 1,366(a) | ..... |
| Aug. 23.... | " .... | 160 | 2,288 | .62 | 31.25 | 1,430 | ..... |
| Oct. 19.... | " .... | 165 | 2,464 | 1.02 | 32.39 | 2,516 | ..... |

(a) Ice measurement.

## Daily Gauge Height and Discharge of Mississagi River at Iron Bridge for 1915-6

Drainage area; 3,565 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | ..... | ..... | 38.67 | 8950 | 34.84 | 4350 | 33.50 | 2910 | 33.25 | 1350 | 33.83 | 4090 | 41.00 | 12300 | 36.66 | 6930 | 36.58 | 6850 | 31.84 | 2090 | 30.88 | 1130 | 32.33 | 2580 |
| 2 | ..... | ..... | 38.25 | 8530 | 34.84 | 4330 | 33.67 | 3000 | 33.17 | 1350 | 34.12 | 4380 | 40.80 | 11090 | 36.50 | 6770 | 36.08 | 6350 | 31.84 | 2090 | 30.84 | 1090 | 32.29 | 2540 |
| 3 | ..... | ..... | 37.84 | 8120 | 34.75 | 4150 | 33.75 | 3000 | 33.17 | 1350 | 34.37 | 4630 | 40.60 | 10890 | 36.50 | 6770 | 36.08 | 6350 | 31.75 | 2000 | 30.84 | 1090 | 32.16 | 2410 |
| 4 | ..... | ..... | 37.50 | 7780 | 34.42 | 4040 | 33.84 | 3050 | 33.17 | 1350 | 34.41 | 4670 | 40.58 | 10870 | 36.41 | 6680 | 35.91 | 6180 | 31.75 | 2000 | 31.42 | 1670 | 32.00 | 2250 |
| 5 | ..... | ..... | 36.84 | 7110 | 34.67 | 4260 | 33.84 | 2750 | 33.17 | 1350 | 34.41 | 4670 | 40.50 | 10790 | 36.25 | 6520 | 35.50 | 5770 | 31.67 | 1920 | 32.58 | 2830 | 32.00 | 2250 |
| 6 | ..... | ..... | 36.67 | 6940 | 34.34 | 4010 | 33.75 | 2650 | 33.17 | 1350 | 34.58 | 4840 | 45.50 | 10790 | 36.83 | 7100 | 35.41 | 5680 | 31.59 | 1840 | 32.08 | 2330 | 31.92 | 2170 |
| 7 | ..... | ..... | 36.50 | 6770 | 34.00 | 3950 | 33.67 | 2580 | 33.17 | 1350 | 34.58 | 4840 | 40.16 | 10450 | 36.33 | 6600 | 35.33 | 5600 | 31.59 | 1840 | 31.75 | 2000 | 31.84 | 2090 |
| 8 | ..... | ..... | 36.25 | 6520 | 34.59 | 3790 | 33.59 | 2520 | 33.17 | 1350 | 34.66 | 4920 | 40.50 | 10790 | 36.25 | 6520 | 35.33 | 5600 | 31.50 | 1750 | 31.59 | 1840 | 31.75 | 2000 |
| 9 | ..... | ..... | 36.25 | 6520 | 34.59 | 3790 | 33.50 | 2420 | 33.00 | 1330 | 34.75 | 5010 | 40.00 | 10290 | 35.83 | 6100 | 35.08 | 5350 | 31.42 | 1670 | 31.46 | 1710 | 31.67 | 1920 |
| 10 | ..... | ..... | 36.42 | 6570 | 34.00 | 3770 | 33.50 | 2350 | 33.00 | 1330 | 35.00 | 5270 | 39.91 | 10200 | 35.50 | 5770 | 34.83 | 5090 | 31.67 | 1920 | 31.38 | 1630 | 31.59 | 1840 |
| 11 | ..... | ..... | 37.00 | 6970 | 34.09 | 3560 | 33.50 | 2210 | 33.00 | 1330 | 35.25 | 5520 | 39.58 | 9870 | 35.08 | 5350 | 35.08 | 5350 | 31.67 | 1920 | 31.32 | 1570 | 31.59 | 1840 |
| 12 | ..... | ..... | 37.42 | 7170 | 33.67 | 3260 | 33.50 | 2150 | 33.00 | 1330 | 35.41 | 5680 | 39.08 | 9370 | 35.33 | 5600 | 34.91 | 5170 | 31.67 | 1920 | 31.42 | 1670 | 31.67 | 1920 |
| 13 | ..... | ..... | 37.75 | 7280 | 33.50 | 3130 | 33.50 | 2150 | 33.00 | 1330 | 35.91 | 6180 | 38.58 | 8860 | 35.83 | 6100 | 34.66 | 4920 | 31.67 | 1920 | 31.75 | 2000 | 31.84 | 2090 |
| 14 | ..... | ..... | 37.92 | 7380 | 33.50 | 3030 | 33.50 | 2150 | 33.08 | 1330 | 36.16 | 6430 | 38.50 | 8780 | 36.50 | 6770 | 34.50 | 4760 | 31.67 | 1920 | 32.08 | 2330 | 31.92 | 2170 |
| 15 | ..... | ..... | 37.75 | 7360 | 33.50 | 2930 | 33.50 | 2550 | 33.00 | 1330 | 36.70 | 6970 | 38.25 | 8530 | 37.00 | 7280 | 34.41 | 4670 | 31.67 | 1920 | 32.00 | 2250 | 31.96 | 2210 |
| 16 | 36.09 | 6360 | 37.42 | 7170 | 33.50 | 2930 | 33.50 | 2550 | 33.00 | 1370 | 37.16 | 7440 | 38.50 | 8780 | 37.16 | 7440 | 34.33 | 4590 | 31.67 | 1920 | 31.92 | 2170 | 32.16 | 2410 |
| 17 | 35.84 | 6110 | 37.59 | 7170 | 33.50 | 2890 | 33.59 | 2550 | 33.00 | 1430 | 37.70 | 7980 | 38.25 | 8530 | 37.50 | 7780 | 34.08 | 4340 | 31.59 | 1840 | 31.84 | 2090 | 32.58 | 2830 |
| 18 | 35.59 | 5860 | 37.67 | 7170 | 33.50 | 2850 | 33.59 | 2550 | 33.00 | 1470 | 38.40 | 8680 | 38.08 | 8360 | 38.00 | 8280 | 33.83 | 4090 | 31.50 | 1750 | 31.67 | 1920 | 32.58 | 2830 |
| 19 | 35.59 | 5860 | 37.25 | 6870 | 33.50 | 2850 | 33.50 | 2550 | 33.00 | 1530 | 38.90 | 9180 | 37.91 | 8190 | 38.58 | 8860 | 33.58 | 3840 | 31.50 | 1750 | 31.59 | 1840 | 32.66 | 2910 |
| 20 | 35.59 | 5860 | 36.84 | 6670 | 33.42 | 2780 | 33.50 | 1850 | 33.00 | 1590 | 40.00 | 10290 | 37.58 | 7860 | 38.33 | 8610 | 33.33 | 3590 | 31.42 | 1670 | 31.50 | 1750 | 32.83 | 3080 |
| 21 | 35.50 | 5770 | 36.59 | 6370 | 33.42 | 2750 | 33.42 | 1750 | 33.00 | 1700 | 40.50 | 10790 | 37.33 | 7610 | 38.58 | 8860 | 33.16 | 3220 | 31.34 | 1590 | 31.46 | 1710 | 34.00 | 4260 |
| 22 | 35.34 | 5610 | 36.42 | 5970 | 33.67 | 3130 | 33.34 | 1750 | 33.00 | 2000 | 41.00 | 12300 | 37.25 | 7530 | 38.58 | 8860 | 32.83 | 3080 | 31.25 | 1500 | 31.54 | 1790 | 34.33 | 4590 |
| 23 | 35.17 | 5440 | 36.25 | 5770 | 33.92 | 3130 | 33.34 | 1750 | 33.00 | 2550 | 40.95 | 12240 | 37.16 | 7440 | 38.00 | 8280 | 32.58 | 2830 | 31.25 | 1500 | 31.40 | 1650 | 34.58 | 4840 |
| 24 | 35.00 | 5270 | 36.00 | 5470 | 33.92 | 3260 | 33.34 | 1750 | 33.00 | 2550 | 41.40 | 12700 | 37.00 | 7280 | 37.41 | 8690 | 38.58 | 2830 | 31.17 | 1420 | 31.50 | 1750 | 36.33 | 6600 |
| 25 | 34.84 | 5100 | 35.67 | 5220 | 34.00 | 3260 | 33.34 | 1680 | 33.00 | 2550 | 41.80 | 13100 | 36.83 | 7100 | 37.16 | 7440 | 32.50 | 2750 | 31.17 | 1420 | 31.59 | 1840 | 37.08 | 7360 |
| 26 | 35.84 | 6110 | 35.34 | 5160 | 34.00 | 3260 | 33.34 | 1550 | 33.00 | 2550 | 42.00 | 13300 | 37.00 | 7280 | 37.00 | 7280 | 32.41 | 2660 | 31.09 | 1340 | 31.59 | 1840 | 37.08 | 7360 |
| 27 | 37.50 | 7780 | 35.50 | 5160 | 34.00 | 3260 | 33.34 | 1450 | 33.08 | 2550 | 41.80 | 13100 | 37.50 | 7780 | 36.50 | 6770 | 32.25 | 2500 | 31.09 | 1340 | 31.55 | 1800 | 37.08 | 7360 |
| 28 | 38.84 | 9120 | 35.34 | 4960 | 33.92 | 3200 | 33.25 | 1350 | 33.08 | 2550 | 41.50 | 12800 | 37.83 | 8110 | 36.50 | 6770 | 32.16 | 2410 | 31.00 | 1250 | 31.84 | 2090 | 37.08 | 7360 |
| 29 | 39.00 | 9290 | 35.00 | 4660 | 33.75 | 3030 | 33.25 | 1350 | 33.16 | 2550 | 41.35 | 12650 | 37.83 | 8110 | 36.66 | 6930 | 32.08 | 2330 | 31.00 | 1250 | 32.12 | 2370 | 37.08 | 7360 |
| 30 | 39.09 | 9380 | 34.67 | 4360 | 33.59 | 2950 | ..... | .... | 33.33 | 3150 | 41.20 | 12500 | 37.83 | 8110 | 36.83 | 7100 | 32.00 | 2250 | 30.92 | 1170 | 32.33 | 2580 | 37.25 | 7530 |
| 31 | ..... | ..... | 34.50 | 4060 | 33.42 | 2850 | ..... | .... | 33.50 | 3760 | ..... | ..... | 37.66 | 7940 | ..... | ..... | 31.92 | 2170 | 30.92 | 1170 | ..... | .... | 37.08 | 7360 |

## Monthly Discharge of Mississagi River at Iron Bridge for 1915-6

Drainage Area 3565 Square Miles.

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| Nov. 15-30, (1915) | 9,380 | 5,100 | 6,595 | 2.63 | 1.43 | 1.85 | 1.03 |
| December ..... | 8,950 | 4,060 | 6,522 | 2.51 | 1.14 | 1.83 | 2.11 |
| January ..(1916) | 4,350 | 2,750 | 3,378 | 1.22 | .77 | .95 | 1.10 |
| February..... | 3,050 | 1,350 | 2,237 | .86 | .38 | .63 | .68 |
| March..... | 3,760 | 1,330 | 1,805 | 1.05 | .37 | .51 | .59 |
| April..... | 13,300 | 4,090 | 8,238 | 3.73 | 1.15 | 2.31 | 2.58 |
| May ..... | 12,300 | 7,100 | 9,028 | 3.45 | 1.99 | 2.53 | 2.92 |
| June ..... | 8,860 | 5,350 | 7,160 | 2.49 | 1.50 | 2.01 | 2.24 |
| July..... | 6,850 | 2,170 | 4,302 | 1.92 | .61 | 1.21 | 1.39 |
| August..... | 2,090 | 1,170 | 1,697 | .59 | .33 | .48 | .55 |
| September..... | 2,830 | 1,090 | 1,878 | .79 | .31 | .53 | .59 |
| October ..... | 7,530 | 1,840 | 3,817 | 2.11 | .52 | 1.07 | 1.23 |
| The period..... | 13,300 | 1,090 | 4,641 | 3.45 | .31 | 1.30 | 17.70 |

## Muskoka River (North Branch) near Port Sydney

Location—At the highway bridge near the Village of Port Sydney and ¼ mile below Mary Lake, on lot 25, concession 5, Township of Stephenson, Muskoka District.

Records Available—Discharge measurements from April, 1915, to October, 1916. Daily gauge heights from April 16, 1915, to Oct. 31, 1916.

Drainage Area—560 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches and fastened to abutment on left upstream side of bridge. Zero of gauge (elev. 7.00 feet) is referred to a bench mark (elev. 24.78 feet) painted on top of right abutment, downstream side.

Channel—Straight for about 1,500 feet above and 500 feet below gauging station. Both banks are high, wooded, and not liable to overflow. The bed of the channel is composed of clay and gravel.

Discharge Measurements—Made from highway bridge with a small Price current meter.

Regulation—The operation of dam at Mary Lake during certain periods of the year will cause fluctuation at the gauge.

Accuracy—The rating curve is fairly well defined, and estimates of discharge are fair.

Observer—A. E. McInnes, Port Sydney.

### Discharge Measurements of Muskoka River (North Branch) near Port Sydney in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 11.... | Murray, W. S.. | 53 | 302 | 1.86 | 8.58 | 563 | ..... |
| Dec. 23.... | " .. | 52 | 308 | 1.72 | 8.66 | 533 | ..... |
| 1916 | | | | | | | |
| Jan. 19.... | Murray, W. S... | 50 | 292 | 1.55 | 8.41 | 452(a) | ..... |
| Feb. 17.... | " .. | 53 | 313 | 2.24 | 8.80 | 704 | ..... |
| Mar. 16.... | " .. | 48 | 293 | 1.67 | 8.52 | 495 | ..... |
| Apr. 11.... | " .. | 58 | 444 | 5.90 | 11.16 | 2,622 | ..... |
| " 29.... | " .. | 58 | 499 | 7.12 | 12.00 | 3,552 | ..... |
| May 23.... | " .. | 55 | 366 | 3.77 | 9.75 | 1,482 | ..... |
| June 22.... | " .. | 55 | 331 | 3.09 | 9.34 | 1,023 | ..... |
| July 11.... | " .. | 47 | 260 | .62 | 7.85 | 163 | ..... |

(a) River ice-covered below section.

# Daily Gauge Height and Discharge of Muskoka River (North Branch) near Port Sydney for 1915-6

Drainage Area, 560 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 8.41 | 446 | 9.41 | 1130 | 8.66 | 605 | 10.62 | 2060 | 8.41 | 446 | 11.08 | 2440 | 10.91 | 2290 | 9.25 | 1010 | 9.00 | 840 | 7.83 | 125 | 7.71 | 88 | 7.83 | 125 |
| 2 | 8.41 | 446 | 9.41 | 1130 | 8.66 | 605 | 10.58 | 2020 | 8.41 | 446 | 10.95 | 2320 | 11.41 | 2740 | 9.25 | 1010 | 9.00 | 840 | 7.83 | 125 | 7.71 | 88 | 7.83 | 125 |
| 3 | 8.41 | 446 | 9.41 | 1130 | 8.66 | 605 | 10.58 | 2020 | 8.41 | 446 | 10.83 | 2220 | 11.41 | 2740 | 9.58 | 1260 | 9.00 | 840 | 7.83 | 125 | 7.71 | 88 | 7.83 | 125 |
| 4 | 8.41 | 446 | 9.41 | 1130 | 8.66 | 605 | 10.41 | 1890 | 8.50 | 500 | 10.83 | 2220 | 11.33 | 2670 | 9.50 | 1200 | 8.91 | 775 | 7.83 | 125 | 7.71 | 88 | 7.83 | 125 |
| 5 | 8.83 | 720 | 9.41 | 1130 | 8.33 | 400 | 10.33 | 1820 | 8.50 | 500 | 10.83 | 2220 | 11.16 | 2510 | 9.29 | 1040 | 8.91 | 775 | 7.83 | 125 | 8.33 | 398 | 7.83 | 125 |
| 6 | 8.83 | 720 | 9.41 | 1130 | 8.33 | 400 | 10.25 | 1760 | 8.50 | 500 | 11.58 | 2900 | 11.16 | 2510 | 9.08 | 895 | 8.70 | 620 | 7.83 | 125 | 8.25 | 350 | 7.71 | 88 |
| 7 | 8.83 | 720 | 9.41 | 1130 | 8.33 | 400 | 10.16 | 1700 | 8.66 | 605 | 11.58 | 2900 | 11.20 | 2550 | 9.25 | 1010 | 8.50 | 500 | 8.83 | 720 | 8.16 | 296 | 7.71 | 88 |
| 8 | 8.58 | 550 | 9.16 | 950 | 8.33 | 400 | 10.16 | 1700 | 8.37 | 422 | 12.66 | 4140 | 11.00 | 2370 | 9.25 | 1010 | 8.16 | 296 | 8.83 | 720 | 7.91 | 155 | 7.83 | 125 |
| 9 | 8.58 | 550 | 9.16 | 950 | 8.33 | 400 | 10.08 | 1630 | 8.41 | 446 | 11.33 | 2670 | 10.58 | 2020 | 9.33 | 1070 | 7.83 | 125 | 8.83 | 720 | 7.83 | 125 | 7.83 | 125 |
| 10 | 8.58 | 550 | 9.00 | 840 | 8.33 | 400 | 10.08 | 1630 | 8.50 | 500 | 11.16 | 2510 | 10.33 | 1820 | 9.29 | 1040 | 7.83 | 125 | 8.25 | 350 | 7.54 | 53 | 7.91 | 155 |
| 11 | 8.58 | 550 | 9.00 | 840 | 8.66 | 605 | 9.91 | 1510 | 8.50 | 500 | 11.16 | 2510 | 10.08 | 1630 | 8.91 | 775 | 7.83 | 125 | 8.25 | 350 | 7.66 | 77 | 7.91 | 155 |
| 12 | 8.58 | 550 | 8.16 | 296 | 8.66 | 605 | 9.50 | 1200 | 8.50 | 500 | 11.16 | 2510 | 10.00 | 1575 | 8.70 | 630 | 7.83 | 125 | 8.08 | 249 | 7.70 | 85 | 7.85 | 132 |
| 13 | 8.58 | 550 | 8.16 | 296 | 8.66 | 605 | 9.42 | 1140 | 8.50 | 500 | 11.75 | 3070 | 8.83 | 720 | 8.50 | 500 | 7.87 | 140 | 7.91 | 155 | 7.75 | 100 | 7.87 | 140 |
| 14 | 8.58 | 550 | 8.16 | 296 | 8.66 | 605 | 9.41 | 1130 | 8.50 | 500 | 11.75 | 3070 | 9.33 | 1070 | 8.58 | 550 | 7.87 | 140 | 7.75 | 100 | 7.75 | 100 | 7.87 | 140 |
| 15 | 8.58 | 550 | 8.16 | 296 | 8.66 | 605 | 9.04 | 870 | 8.50 | 500 | 12.25 | 3620 | 9.83 | 1450 | 8.75 | 665 | 7.91 | 155 | 7.75 | 100 | 7.75 | 100 | 7.87 | 140 |
| 16 | 8.58 | 550 | 8.16 | 296 | 8.66 | 605 | 8.75 | 665 | 8.50 | 500 | 12.16 | 3520 | 10.62 | 2060 | 9.33 | 1070 | 7.91 | 155 | 7.75 | 100 | 7.83 | 125 | 7.87 | 140 |
| 17 | 7.83 | 129 | 8.41 | 446 | 8.41 | 446 | 8.83 | 720 | 8.50 | 500 | 12.20 | 3560 | 10.50 | 1960 | 9.50 | 1200 | 8.00 | 205 | 7.83 | 125 | 7.83 | 125 | 8.08 | 249 |
| 18 | 7.83 | 129 | 8.41 | 446 | 8.41 | 446 | 8.75 | 665 | 8.50 | 500 | 12.50 | 3930 | 10.37 | 1860 | 9.75 | 1290 | 8.00 | 205 | 7.83 | 125 | 7.83 | 125 | 8.16 | 296 |
| 19 | 8.58 | 550 | 8.16 | 296 | 8.41 | 446 | 8.41 | 446 | 8.41 | 446 | 12.50 | 3930 | 10.33 | 1820 | 9.91 | 1510 | 8.62 | 580 | 7.83 | 125 | 7.83 | 125 | 8.45 | 470 |
| 20 | 8.58 | 550 | 8.16 | 296 | 8.41 | 446 | 8.41 | 446 | 8.33 | 398 | 12.33 | 3720 | 9.33 | 1070 | 9.70 | 1350 | 8.08 | 249 | 7.83 | 125 | 7.83 | 125 | 8.75 | 665 |
| 21 | 8.58 | 550 | 8.66 | 605 | 8.41 | 446 | 8.50 | 500 | 8.25 | 350 | 12.00 | 2370 | 9.91 | 1510 | 9.33 | 1070 | 8.58 | 550 | 7.83 | 125 | 7.83 | 125 | 8.46 | 476 |
| 22 | 8.58 | 550 | 8.66 | 605 | 8.45 | 470 | 8.50 | 500 | 8.25 | 350 | 12.83 | 4360 | 9.91 | 1510 | 9.33 | 1070 | 8.58 | 550 | 7.79 | 112 | 7.83 | 125 | 8.41 | 446 |
| 23 | 8.58 | 550 | 8.66 | 605 | 9.08 | 895 | 8.50 | 500 | 8.25 | 350 | 12.66 | 4140 | 9.91 | 1510 | 9.33 | 1070 | 8.25 | 350 | 7.66 | 77 | 7.83 | 125 | 9.41 | 1130 |
| 24 | 9.16 | 950 | 8.66 | 605 | 9.33 | 1070 | 8.50 | 500 | 8.25 | 350 | 12.66 | 4140 | 9.75 | 1390 | 9.33 | 1070 | 7.91 | 155 | 7.66 | 77 | 7.83 | 125 | 9.50 | 1200 |
| 25 | 9.16 | 950 | 8.66 | 605 | 9.33 | 1070 | 8.75 | 665 | 8.25 | 350 | 12.58 | 4030 | 9.75 | 1390 | 9.41 | 1130 | 7.83 | 125 | 7.66 | 77 | 7.83 | 125 | 9.54 | 1230 |
| 26 | 9.16 | 950 | 8.66 | 605 | 9.37 | 1100 | 8.75 | 665 | 8.25 | 350 | 12.50 | 3930 | 9.75 | 1390 | 9.37 | 1100 | 7.83 | 125 | 7.66 | 77 | 7.83 | 125 | 9.78 | 1410 |
| 27 | 9.16 | 950 | 8.66 | 605 | 9.70 | 1350 | 8.58 | 550 | 8.25 | 350 | 12.37 | 3760 | 9.75 | 1390 | 9.00 | 840 | 7.83 | 125 | 7.66 | 77 | 7.83 | 125 | 10.08 | 1630 |
| 28 | 9.41 | 1130 | 8.66 | 605 | 10.41 | 1890 | 8.58 | 550 | 8.70 | 630 | 12.33 | 3720 | 9.83 | 1450 | 9.00 | 840 | 7.83 | 125 | 8.00 | 205 | 7.83 | 125 | 10.00 | 1570 |
| 29 | 9.41 | 1130 | 8.66 | 605 | 10.58 | 2020 | 8.58 | 550 | 8.75 | 665 | 12.04 | 3380 | 9.08 | 895 | 9.00 | 840 | 7.58 | 61 | 8.00 | 205 | 7.83 | 125 | 9.91 | 1510 |
| 30 | 9.41 | 1130 | 8.66 | 605 | 10.66 | 2090 | ..... | ..... | 10.53 | 1980 | 11.00 | 2370 | 9.41 | 1130 | 9.00 | 840 | 7.58 | 61 | 7.71 | 88 | 7.83 | 125 | 9.91 | 1510 |
| 31 | ..... | ..... | 8.66 | 605 | 10.66 | 2090 | ..... | ..... | 11.00 | 2370 | ..... | ..... | 9.41 | 1130 | ..... | ..... | 7.62 | 69 | 7.71 | 88 | ..... | ..... | 9.62 | 1290 |

## Monthly Discharge of Muskoka River (North Branch) near Port Sydney for 1915-6

Drainage Area 560 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile. | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 1,130 | 129 | 636 | 2.02 | .23 | 1.14 | 1.27 |
| December. " | 1,130 | 296 | 681 | 2.02 | .53 | 1.22 | 1.41 |
| January .. (1916) | 2,090 | 400 | 798 | 3.73 | .71 | 1.42 | 1.64 |
| February ..... | 2,060 | 446 | 1,104 | 3.68 | .80 | 1.97 | 2.12 |
| March..... | 2,370 | 350 | 573 | 4.23 | .62 | 1.02 | 1.18 |
| April ..... | 4,360 | 2,220 | 3,206 | 7.79 | 3.96 | 5.72 | 6.38 |
| May ..... | 2,740 | 720 | 1,746 | 4.89 | 1.29 | 3.12 | 3.60 |
| June ..... | 1,510 | 500 | 998 | 2.70 | .89 | 1.78 | 1.99 |
| July..... | 840 | 61 | 326 | 1.50 | .11 | .58 | .67 |
| August..... | 720 | 77 | 194 | 1.29 | .14 | .35 | .40 |
| September..... | 398 | 53 | 136 | .71 | .09 | .24 | .27 |
| October ..... | 1,570 | 88 | 552 | 2.80 | .16 | .99 | 1.14 |
| The year ..... | 4,360 | 53 | 908 | 7.79 | .09 | 1.62 | 21.95 |

## Muskoka River (South Branch) at Tretheway's Falls

Location—At small steel highway bridge known as Tretheway's Falls Bridge, about 1 mile south of the Muskoka Falls Post Office, and about 7 miles south of the Town of Bracebridge, Township of Draper, Muskoka District.

Records Available—Discharge measurements, August, 1912, to October, 1916. Daily gauge heights, June 4, 1914, to October 31, 1916.

Drainage Area—668 square miles.

Gauge—As there is no available place for establishing a permanent staff gauge, a bench mark (elevation 25.00), painted on a stringer, on the up-stream side of the bridge, is used in ascertaining the water elevation, by measuring down to the surface of the stream with a graduated staff. It is referred to a bench mark (elevation 33.08) painted on a large rock on the right bank, 90 feet to the right of the downstream side of the bridge.

Channel and Control—Straight for about 300 feet above and 300 feet below the station. The banks are fairly high, rocky and wooded and will not overflow. The current is very swift and the bed of stream is rough and rocky, with a heavy slope about 250 feet below the section.

Discharge Measurements—Made from the upstream side of the bridge with a Price current meter and a stay line.

Winter Flow—The gauge is located where the current is swift and ice seldom forms across the river for the entire width. The relation of gauge height to discharge is but slightly affected by ice.

Accuracy—Measurements made at Black's Bridge 1 mile above, were used in conjunction with those made at Tretheway's Falls, and a fairly well-defined rating curve has been established. Open water curve used throughout the year.

Observer—Wesley Morrow, Muskoka Falls.

### Discharge Measurements of Muskoka River at Tretheway's Falls in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 9.... | Murray, W. S... | 50 | 174 | 3.45 | 13.92 | 602 | ..... |
| Dec. 15.... | " .... | 50 | 193 | 3.33 | 14.00 | 644 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 19.... | " .... | 49 | 198 | 3.53 | 14.48 | 700 (a) | ..... |
| Feb. 17.... | " .... | 50 | 211 | 4.89 | 14.75 | 1,032 | ..... |
| Mar. 15.... | " .... | 50 | 230 | 5.44 | 15.17 | 1,251 | ..... |
| April 11.... | " .... | 89 | 1,595 | 1.23 | 16.25 | 1,940 (b) | ..... |
| " 28.... | " .... | 125 | 1,960 | 2.21 | 19.34 | 4,338 (c) | ..... |
| May 17.... | " .... | 89 | 1,657 | 1.50 | 17.00 | 2,569 (c) | ..... |
| June 22.... | " .... | 91 | 1,665 | 1.17 | 16.25 | 1,958 (c) | ..... |
| July 13.... | " .... | 89 | 1,390 | .56 | 14.50 | 781 (c) | ..... |
| " 13.... | " .... | 49 | 198 | 4.57 | 14.50 | 908 | ..... |
| Oct. 12.... | " .... | 42 | 129 | 2.55 | 12.92 | 330 | ..... |

(a) River ice-covered above section.
(b) Reading taken at Black's Bridge. Logs in stream.
(c) Reading taken at Black's Bridge.

## Daily Gauge Height and Discharge of Muskoka River (South Branch) at Tretheway's Falls for 1915-6

Drainage Area, 668 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 14.00 | 580 | 14.34 | 700 | 14.09 | 610 | 16.00 | 1560 | 14.59 | 935 | 15.50 | 1460 | 19.00 | 4050 | 16.17 | 1910 | 15.50 | 1460 | 13.84 | 565 | 13.17 | 385 | 13.17 | 385 |
| 2 | 14.00 | 580 | 14.34 | 700 | 14.09 | 610 | 16.25 | 1710 | 14.50 | 890 | 16.00 | 1790 | 19.00 | 4050 | 16.09 | 1850 | 14.67 | 975 | 13.84 | 565 | 13.17 | 385 | 13.17 | 385 |
| 3 | 14.00 | 580 | 14.34 | 700 | 14.09 | 610 | 16.00 | 1560 | 14.50 | 890 | 16.00 | 1790 | 19.00 | 4050 | 15.84 | 1710 | 14.50 | 890 | 13.84 | 565 | 13.17 | 385 | 13.17 | 385 |
| 4 | 13.92 | 550 | 14.34 | 700 | 14.09 | 610 | 16.00 | 1560 | 14.50 | 890 | 16.00 | 1790 | 19.17 | 4190 | 15.50 | 1460 | 14.59 | 935 | 13.84 | 565 | 13.17 | 385 | 13.17 | 385 |
| 5 | 13.92 | 550 | 14.34 | 700 | 14.09 | 610 | 16.25 | 1710 | 14.50 | 890 | 16.00 | 1790 | 18.84 | 3920 | 16.00 | 1790 | 14.59 | 935 | 13.84 | 565 | 13.17 | 385 | 13.09 | 374 |
| 6 | 13.92 | 550 | 14.25 | 665 | 14.17 | 640 | 16.50 | 2140 | 15.00 | 1160 | 16.25 | 1960 | 18.67 | 3790 | 16.50 | 2140 | 14.50 | 890 | 13.67 | 501 | 13.17 | 385 | 13.09 | 374 |
| 7 | 13.92 | 550 | 14.17 | 640 | 14.17 | 640 | 16.50 | 2140 | 14.59 | 935 | 16.50 | 2140 | 18.50 | 3650 | 17.00 | 2490 | 14.50 | 890 | 13.50 | 450 | 13.17 | 385 | 13.09 | 374 |
| 8 | 13.92 | 550 | 14.17 | 640 | 14.17 | 640 | 16.00 | 1790 | 14.59 | 935 | 16.67 | 2260 | 18.50 | 3650 | 17.50 | 2860 | 14.50 | 890 | 13.34 | 413 | 13.17 | 385 | 13.09 | 374 |
| 9 | 13.92 | 550 | 14.17 | 640 | 14.09 | 610 | 16.00 | 1790 | 14.75 | 1020 | 16.67 | 2260 | 18.34 | 3520 | 17.50 | 2860 | 14.50 | 890 | 13.25 | 398 | 13.17 | 385 | 13.09 | 374 |
| 10 | 13.92 | 550 | 14.17 | 640 | 14.09 | 610 | 16.00 | 1790 | 15.00 | 1160 | 17.00 | 2490 | 18.17 | 3390 | 17.34 | 2740 | 14.50 | 890 | 13.25 | 398 | 13.17 | 385 | 13.09 | 374 |
| 11 | 13.92 | 550 | 14.17 | 640 | 14.17 | 640 | 16.00 | 1790 | 16.00 | 1790 | 17.25 | 2680 | 18.00 | 3250 | 17.34 | 2740 | 14.42 | 850 | 13.25 | 398 | 13.17 | 385 | 13.09 | 374 |
| 12 | 13.92 | 550 | 14.09 | 610 | 14.17 | 640 | 15.92 | 1730 | 16.00 | 1790 | 17.50 | 2865 | 17.84 | 3120 | 17.34 | 2740 | 14.42 | 850 | 13.17 | 385 | 13.17 | 385 | 13.09 | 374 |
| 13 | 13.92 | 550 | 14.09 | 610 | 14.25 | 665 | 15.92 | 1730 | 16.00 | 1790 | 17.50 | 2865 | 17.50 | 2865 | 17.17 | 2620 | 14.34 | 810 | 13.17 | 385 | 13.17 | 385 | 13.00 | 365 |
| 14 | 13.92 | 550 | 14.17 | 640 | 14.17 | 640 | 15.84 | 1680 | 15.75 | 1620 | 17.75 | 3050 | 17.50 | 2865 | 17.00 | 2490 | 14.34 | 810 | 13.17 | 385 | 13.17 | 385 | 13.00 | 365 |
| 15 | 13.92 | 550 | 14.09 | 610 | 14.09 | 610 | 15.67 | 1560 | 15.50 | 1460 | 17.75 | 3056 | 17.17 | 2620 | 16.67 | 2260 | 14.34 | 810 | 13.25 | 398 | 13.17 | 385 | 13.00 | 365 |
| 16 | 13.92 | 550 | 14.09 | 610 | 14.09 | 610 | 15.67 | 1560 | 15.50 | 1460 | 18.00 | 3250 | 17.25 | 2680 | 16.50 | 2140 | 14.34 | 810 | 13.25 | 398 | 13.17 | 385 | 13.00 | 365 |
| 17 | 13.84 | 525 | 14.09 | 610 | 14.09 | 610 | 15.50 | 1460 | 15.50 | 1460 | 18.25 | 3450 | 17.34 | 2740 | 16.34 | 2030 | 14.34 | 810 | 13.25 | 398 | 13.17 | 385 | 13.00 | 365 |
| 18 | 13.84 | 525 | 14.00 | 580 | 14.09 | 610 | 15.17 | 1260 | 15.25 | 1310 | 18.50 | 3650 | 17.50 | 2865 | 16.67 | 2260 | 14.34 | 810 | 13.25 | 398 | 13.17 | 385 | 13.09 | 374 |
| 19 | 13.84 | 525 | 14.00 | 580 | 14.09 | 610 | 14.84 | 1060 | 15.00 | 1160 | 18.67 | 3790 | 17.25 | 2680 | 16.67 | 2260 | 14.25 | 765 | 13.25 | 398 | 13.13 | 380 | 13.17 | 385 |
| 20 | 14.17 | 640 | 14.00 | 580 | 14.00 | 580 | 14.67 | 975 | 15.00 | 1160 | 18.67 | 3790 | 17.00 | 2490 | 16.42 | 2080 | 14.25 | 765 | 13.25 | 398 | 13.13 | 380 | 13.25 | 398 |
| 21 | 14.00 | 580 | 14.09 | 610 | 14.00 | 580 | 14.67 | 975 | 15.00 | 1160 | 18.67 | 3790 | 17.00 | 2490 | 16.25 | 1960 | 14.34 | 810 | 13.25 | 398 | 13.13 | 380 | 13.34 | 413 |
| 22 | 14.00 | 580 | 14.09 | 610 | 14.75 | 865 | 14.59 | 935 | 15.00 | 1160 | 18.84 | 3920 | 17.00 | 2490 | 16.25 | 1960 | 14.34 | 810 | 13.25 | 398 | 13.13 | 380 | 13.34 | 413 |
| 23 | 14.00 | 580 | 14.09 | 610 | 15.09 | 1040 | 14.58 | 930 | 14.50 | 890 | 18.50 | 3650 | 17.00 | 2490 | 16.17 | 1910 | 14.25 | 765 | 13.25 | 398 | 13.13 | 380 | 13.34 | 413 |
| 24 | 13.92 | 550 | 14.09 | 610 | 15.09 | 1040 | 14.50 | 890 | 14.00 | 660 | 19.00 | 4050 | 17.00 | 2490 | 16.00 | 1790 | 14.25 | 765 | 13.17 | 385 | 13.13 | 380 | 13.42 | 430 |
| 25 | 14.00 | 580 | 14.09 | 610 | 15.00 | 995 | 14.50 | 890 | 14.00 | 660 | 19.34 | 4340 | 17.00 | 2490 | 16.00 | 1790 | 14.25 | 765 | 13.17 | 385 | 13.13 | 380 | 13.42 | 430 |
| 26 | 14.00 | 580 | 14.09 | 610 | 15.00 | 995 | 14.50 | 890 | 14.00 | 660 | 19.50 | 4470 | 17.00 | 2490 | 16.00 | 1790 | 14.25 | 765 | 13.17 | 385 | 13.13 | 380 | 13.50 | 450 |
| 27 | 14.00 | 580 | 14.09 | 610 | 15.50 | 1260 | 14.50 | 890 | 14.00 | 660 | 19.50 | 4470 | 17.00 | 2490 | 16.25 | 1960 | 14.09 | 685 | 13.17 | 385 | 13.09 | 374 | 13.50 | 450 |
| 28 | 14.34 | 700 | 14.09 | 610 | 15.25 | 1130 | 14.50 | 890 | 14.25 | 765 | 19.34 | 4340 | 17.00 | 2490 | 16.50 | 2140 | 14.00 | 640 | 13.17 | 385 | 13.09 | 374 | 13.59 | 477 |
| 29 | 14.34 | 700 | 14.09 | 610 | 15.25 | 1130 | 14.50 | 890 | 14.34 | 810 | 19.00 | 4050 | 17.00 | 2490 | 16.17 | 1910 | 14.00 | 640 | 13.17 | 385 | 13.09 | 374 | 13.59 | 477 |
| 30 | 14.34 | 700 | 14.00 | 580 | 15.75 | 1410 | ..... | ..... | 14.45 | 865 | 19.00 | 4050 | 16.50 | 2140 | 15.75 | 1610 | 13.92 | 600 | 13.17 | 385 | 13.09 | 374 | 13.59 | 477 |
| 31 | ..... | .... | 14.09 | 610 | 16.00 | 1560 | ..... | ..... | 14.84 | 1060 | ..... | .... | 16.34 | 2030 | ..... | .... | 13.84 | 565 | 13.17 | 385 | ..... | ..... | 13.59 | 477 |

## Monthly Discharge of Muskoka River (South Branch) at Tretheway's Falls in 1915-6

Drainage Area, 668 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 700 | 525 | 574 | 1.05 | .79 | .86 | .96 |
| December " | 700 | 580 | 628 | 1.05 | .87 | .94 | 1.08 |
| January .. (1916) | 1,560 | 580 | 787 | 2.34 | .87 | 1.18 | 1.36 |
| February ..... | 2,140 | 890 | 1,405 | 3.20 | 1.33 | 2.10 | 2.27 |
| March ..... | 1,790 | 660 | 1,099 | 2.68 | .99 | 1.65 | 1.90 |
| April..... | 4,470 | 1,460 | 3,110 | 6.69 | 2.19 | 4.66 | 5.20 |
| May..... | 4,190 | 2,030 | 3,000 | 6.27 | 3.04 | 4.49 | 5.18 |
| June..... | 2,860 | 1,610 | 2,142 | 4.28 | 2.41 | 3.21 | 3.58 |
| July..... | 1,460 | 565 | 824 | 2.19 | .84 | 1.23 | 1.42 |
| August ..... | 565 | 385 | 426 | .84 | .58 | .64 | .74 |
| September ..... | 385 | 374 | 382 | .58 | .56 | .57 | .64 |
| October..... | 477 | 365 | 401 | .71 | .55 | .60 | .69 |
| The year..... | 4,470 | 365 | 1,227 | 6.69 | .55 | 1.84 | 25.02 |

## Seguin River near Parry Sound

Location—700 feet below Mountain Dam, two miles above the highway bridge, and about seven miles above the Town of Parry Sound, Township of McDougall, Parry Sound District.

Records Available—Discharge measurements from June, 1914, to October, 1916. Daily gauge heights from August 1, 1915, to October 31, 1916.

Drainage Area—380 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, firmly wedged in rock on left shore 200 feet below dam. Zero of gauge (elev. 8.00 feet) is referred to a bench mark (elev. 15.00 feet) painted on a large rock directly across stream from gauge.

Channel—Both banks are high, wooded and not liable to overflow. The bed of the stream is composed of rocks and boulders, slightly shifting. The current is swift, and flows through one channel at all stages.

Discharge Measurements—Made by wading with a Price current meter. During high water, measurements are made at the highway bridge at the head of Mill Lake, 2 miles below wading section.

Regulation—The dam 700 feet above gauging station causes fluctuation of river at gauge.

Winter Flow—Ice forms along the banks of river at the station during the winter months. The river is entirely covered with ice for a considerable distance above and below station.

Accuracy—Discharges for gauge heights below 10.6 feet are considered fair. Rating curve above this point not very well defined.

Observer—Percy Burnside, Parry Sound.

### Discharge Measurements of Seguin River near Parry Sound in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Dec. 14, .... | Murray, W. S.... | 63 | 538 | 1.23 | 11.61 | 665(a | ..... |
| 1916 | | | | | | | |
| Feb. 16, .... | " .... | 63 | 553 | 1.65 | 12.62 | 916(a) | ..... |
| Mar. 14 .... | " .... | 63 | 364 | .72 | 11.12 | 262(b) | ..... |
| April 10 .... | " .... | 63 | 551 | 5.00 | 13.00 | 2,857(a) | ..... |
| May 16 .... | " .... | 63 | 516 | 2.65 | 12.39 | 1,369(a) | ..... |
| June 21 .... | " .... | 63 | 494 | .92 | 11.33 | 456(a) | ..... |
| July 12 .... | " .... | 63 | 423 | .64 | 10.87 | 270(a) | ..... |
| Sept. 18 .... | " .... | 63 | 152 | 1.78 | 10.97 | 270(a) | ..... |
| Oct. 11 .... | " .... | 91 | 125 | 1.52 | 10.66 | 190 | ..... |

(a) Measurement made at highway bridge.
(b) Ice measurement.

## Daily Gauge Height and Discharge of Seguin River near Parry Sound (Mountain Dam) for 1915-6

Drainage Area, 380 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 11.81 | 840 | 11.76 | 795 | 11.25 | 448 | 12.91 | 2470 | 11.16 | 334 | 12.00 | 1010 | 13.50 | 4000 | 12.16 | 1180 | 11.08 | 361 | 10.58 | 186 | 10.58 | 186 | 10.50 | 170 |
| 2 | 11.91 | 930 | 11.83 | 855 | 11.16 | 400 | 12.83 | 2200 | 11.16 | 334 | 12.00 | 1010 | 13.50 | 4000 | 11.91 | 930 | 11.08 | 361 | 10.58 | 186 | 10.66 | 208 | 10.50 | 170 |
| 3 | 12.00 | 1010 | 11.93 | 945 | 11.08 | 361 | 12.83 | 2200 | 11.16 | 334 | 12.00 | 1010 | 13.75 | 4650 | 11.91 | 930 | 11.08 | 361 | 10.58 | 186 | 10.66 | 208 | 10.41 | 156 |
| 4 | 12.12 | 1130 | 12.08 | 1090 | 11.00 | 325 | 12.83 | 2200 | 11.16 | 334 | 12.08 | 1090 | 13.75 | 4650 | 12.00 | 1010 | 11.00 | 325 | 10.50 | 170 | 10.66 | 208 | 10.41 | 156 |
| 5 | 12.28 | 1330 | 12.12 | 1130 | 11.16 | 400 | 12.83 | 1970 | 11.16 | 334 | 12.16 | 1180 | 13.75 | 4650 | 11.91 | 930 | 11.00 | 325 | 10.50 | 170 | 10.66 | 208 | 10.33 | 145 |
| 6 | 12.43 | 1510 | 11.79 | 820 | 11.12 | 380 | 12.91 | 1840 | 11.16 | 334 | 12 00 | 1010 | 13.75 | 4650 | 11.83 | 855 | 11.08 | 361 | 10.50 | 170 | 10.66 | 208 | 10.33 | 145 |
| 7 | 12.43 | 1510 | 11.54 | 630 | 11.16 | 400 | 12.83 | 1470 | 11.20 | 343 | 12.00 | 1010 | 13.50 | 4000 | 11.75 | 785 | 11.00 | 325 | 10.50 | 170 | 10.75 | 235 | 10.33 | 145 |
| 8 | 12.56 | 1710 | 11.41 | 540 | 11.29 | 470 | 12.75 | 1170 | 11.25 | 370 | 12.50 | 1610 | 13.16 | 4120 | 11.75 | 785 | 11.08 | 361 | 10.50 | 170 | 10.79 | 247 | 10.33 | 145 |
| 9 | 12.58 | 1750 | 11.39 | 530 | 11.00 | 325 | 12.91 | 1290 | 11.25 | 370 | 12.50 | 1610 | 13.08 | 2910 | 11.66 | 715 | 11.08 | 361 | 10.50 | 170 | 10.83 | 260 | 10.33 | 145 |
| 10 | 12.82 | 2240 | 11.50 | 600 | 10.83 | 260 | 12.66 | 1110 | 11.16 | 325 | 12.75 | 2080 | 13.00 | 2700 | 11.58 | 655 | 11.00 | 325 | 10.50 | 170 | 10.83 | 260 | 10.33 | 145 |
| 11 | 11.94 | 955 | 11.62 | 685 | 10.66 | 208 | 12.83 | 1230 | 11.08 | 285 | 13.00 | 2700 | 13.00 | 2700 | 11.58 | 655 | 10.83 | 260 | 10.50 | 170 | 10.83 | 260 | 10.41 | 156 |
| 12 | 11.71 | 755 | 11.77 | 805 | 10.41 | 157 | 12.91 | 1350 | 11.08 | 305 | 13.00 | 2700 | 13.00 | 2700 | 11.58 | 655 | 10.91 | 289 | 10.41 | 157 | 10.83 | 260 | 10.41 | 156 |
| 13 | 11.45 | 565 | 11.66 | 715 | 10.33 | 144 | 12.83 | 1110 | 11.12 | 305 | 13.00 | 2700 | 12.50 | 1610 | 11.62 | 685 | 10.91 | 289 | 10.50 | 170 | 10.91 | 289 | 10.50 | 170 |
| 14 | 11.28 | 464 | 11.61 | 680 | 10.25 | 135 | 12.75 | 1010 | 11.00 | 268 | 13.16 | 3120 | 12.25 | 1290 | 11.62 | 685 | 11.00 | 325 | 10.50 | 170 | 10.91 | 289 | 10.54 | 178 |
| 15 | 11.47 | 580 | 11.58 | 655 | 10.50 | 170 | 11.91 | 420 | 11.00 | 250 | 13.25 | 3350 | 12.25 | 1290 | 11.58 | 655 | 11.00 | 325 | 10.58 | 186 | 11.00 | 325 | 10.50 | 170 |
| 16 | 11.75 | 785 | 11.50 | 600 | 10.66 | 208 | 12.62 | 920 | 11.00 | 250 | 13.00 | 2700 | 12.25 | 1290 | 11.62 | 685 | 11.00 | 325 | 10.58 | 186 | 11.00 | 325 | 10.58 | 186 |
| 17 | 11.62 | 685 | 11.50 | 600 | 10.83 | 260 | 12.16 | 535 | 11.00 | 250 | 13.00 | 2700 | 12.33 | 1390 | 11.66 | 715 | 10.91 | 289 | 10.62 | 196 | 11.00 | 325 | 10.58 | 186 |
| 18 | 11.22 | 431 | 11.50 | 600 | 10.83 | 26 | 12.04 | 535 | 11.00 | 250 | 13.00 | 2700 | 12.33 | 1390 | 11.58 | 655 | 10.83 | 260 | 10.66 | 208 | 11.00 | 325 | 10.66 | 208 |
| 19 | 11.12 | 380 | 11.50 | 600 | 10.91 | 289 | 11.83 | 420 | 11.00 | 250 | 13.00 | 2700 | 12.15 | 1290 | 11.58 | 655 | 10.83 | 260 | 10.66 | 208 | 11.00 | 325 | 10.66 | 208 |
| 20 | 11.00 | 325 | 11.41 | 540 | 10.96 | 309 | 11.83 | 420 | 11.00 | 250 | 13.00 | 2700 | 12.25 | 1290 | 11.58 | 655 | 10.75 | 235 | 10.66 | 208 | 11.00 | 325 | 10.75 | 235 |
| 21 | 11.08 | 261 | 11.41 | 540 | 10.92 | 293 | 11.58 | 370 | 11.08 | 274 | 13.00 | 2700 | 12.16 | 1180 | 11.33 | 493 | 10.75 | 235 | 10.58 | 186 | 11.00 | 325 | 10.83 | 260 |
| 22 | 11.24 | 442 | 11.37 | 515 | 11.00 | 325 | 11.50 | 285 | 11.08 | 274 | 13.00 | 2700 | 12.16 | 1180 | 11.33 | 493 | 10.66 | 208 | 10.58 | 186 | 11.00 | 325 | 11.00 | 325 |
| 23 | 11.68 | 730 | 11.25 | 448 | 11.33 | 493 | 11.54 | 285 | 11.12 | 325 | 13.00 | 2700 | 12.08 | 1090 | 11.41 | 540 | 10.58 | 186 | 10.58 | 186 | 11.00 | 325 | 11.16 | 400 |
| 24 | 11.54 | 630 | 11.16 | 400 | 11.58 | 655 | 11.50 | 285 | 11.16 | 325 | 13.08 | 2910 | 12.08 | 1090 | 11.41 | 540 | 10.58 | 186 | 10.58 | 186 | 11.00 | 325 | 11.41 | 540 |
| 25 | 11.41 | 540 | 11.29 | 470 | 11.83 | 855 | 11.58 | 325 | 11.16 | 400 | 13.08 | 2910 | 12.12 | 1120 | 11.41 | 540 | 10.58 | 186 | 10.50 | 170 | 11.00 | 325 | 11.58 | 655 |
| 26 | 11.77 | 805 | 11.42 | 550 | 11.91 | 930 | 11.83 | 475 | 11.41 | 540 | 13.08 | 2910 | 12.16 | 1180 | 11.33 | 493 | 10.58 | 186 | 10.41 | 157 | 11.00 | 325 | 11.75 | 785 |
| 27 | 11.16 | 400 | 11.50 | 600 | 12.00 | 1010 | 11.41 | 325 | 11.50 | 600 | 13.16 | 3120 | 12.16 | 1180 | 11.33 | 493 | 10.58 | 186 | 10.41 | 157 | 11.00 | 325 | 11.91 | 930 |
| 28 | 11.46 | 575 | 11.54 | 630 | 12.16 | 1180 | 11.46 | 475 | 11.58 | 655 | 13.16 | 3120 | 12.16 | 1180 | 11.25 | 448 | 10.58 | 186 | 10.33 | 144 | 10.83 | 260 | 12.08 | 1090 |
| 29 | 11.56 | 640 | 11.50 | 600 | 12.25 | 1290 | 11.37 | 464 | 11.58 | 655 | 13.25 | 3350 | 12.16 | 1180 | 11.16 | 400 | 10.58 | 186 | 10.41 | 157 | 10.58 | 186 | 12.08 | 1090 |
| 30 | 11.66 | 715 | 11.41 | 540 | 12.41 | 1480 | ..... | ..... | 11.66 | 715 | 13.50 | 4000 | 12.00 | 1010 | 11.16 | 400 | 10.58 | 186 | 10.50 | 170 | 10.50 | 170 | 12.08 | 1090 |
| 31 | ..... | ..... | 11.32 | 487 | 12.50 | 1610 | ..... | ..... | 11.91 | 930 | ..... | ..... | 12.16 | 1180 | ..... | ..... | 10.58 | 186 | 10.54 | 178 | ..... | ..... | 12.08 | 1090 |

## Monthly Discharge of Seguin River near Parry Sound for 1915-6

Drainage Area, 380 Square Miles

| Month. | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 2,240 | 325 | 857 | 5.89 | .86 | 2.26 | 2.52 |
| December " | 1,130 | 400 | 651 | 2.97 | 1.05 | 1.71 | 1.97 |
| January (1916) | 1,610 | 135 | 517 | 4.24 | .36 | 1.36 | 1.57 |
| February ..... | 2,470 | 285 | 1,005 | 6.50 | .75 | 2.64 | 2.85 |
| March..... | 930 | 250 | 380 | 2.45 | .66 | 1.00 | 1.15 |
| April ..... | 4,000 | 1,010 | 2,370 | 10.53 | 2.66 | 6.24 | 6.96 |
| May ..... | 4,650 | 1,010 | 2,198 | 12.24 | 2.66 | 5.78 | 6.66 |
| June ..... | 1,180 | 400 | 677 | 3.11 | 1.05 | 1.78 | 1.99 |
| July..... | 361 | 186 | 272 | .95 | .49 | .72 | .83 |
| August..... | 208 | 144 | 177 | .55 | .38 | .47 | .54 |
| September..... | 325 | 170 | 272 | .86 | .45 | .72 | .80 |
| October ..... | 1,090 | 156 | 375 | 2.87 | .41 | .99 | 1.14 |
| The year..... | 4,650 | 135 | 809 | 12.24 | .36 | 2.13 | 28.99 |

## South River near Powassan

**Location**—At highway bridge known as Healey's Bridge, about 2½ miles north-west of the Town of Powassan, on lot 21, concession 13, Township of Himsworth, District of Parry Sound.

**Records Available**—Discharge measurements from March, 1912, to October, 1916. Daily gauge heights from March 11, 1914, to October 31, 1916.

**Drainage Area**—294 square miles.

**Gauge**—Vertical steel staff with enamelled face, graduated in feet and inches, which was removed from old bridge and located on the north-west corner of the left abutment of the new Gough's highway bridge, about one mile below gauging station. Zero of gauge (elev. 23.00) is referred to bench mark (elev. 56.15) painted on a rock on the top corner of barn foundation known as Gough's barn, about 350 feet from gauge.

**Channel**—Straight for about 200 feet above and 1,500 feet below the gauging station. Both banks are high and not liable to overflow. The bed of the stream consists of clay and boulders, slightly shifting. The current is moderate.

**Discharge Measurements**—Made from Healey's highway bridge during high water, and, during low water periods, by wading 100 feet above bridge.

**Control**—About 5 miles below gauging station there is a dam used by the Nipissing Power Company plant. There is a two-foot fall 3 miles below section.

**Winter Flow**—During the winter months measurements are made through ice to determine the winter flow. The relation of gauge height to discharge is seriously affected by ice.

**Accuracy**—The rating curve is fairly well defined. Discharges for open water period are considered good. Measurements are made of flow of Genesee Creek entering between section and gauge.

**Observer**—Owen Gough, Powassan.

**Remarks**—The old Gough's Bridge was replaced in April, 1915, by a new bridge 150 feet upstream.

### Discharge Measurements of South River near Powassan in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 29.... | Murray, W. S.... | 111 | 421 | 1.17 | 25.80 | 493 | ..... |
| 1916 | | | | | | | |
| Jan. 15.... | " .... | 70 | 132 | 1.27 | 24.83 | 168 (a) | ..... |
| Feb. 11.... | " .... | 74 | 201 | 1.65 | 26.02 | 333 (b) | ..... |
| April 7.... | " .... | 120 | 1,052 | 1.48 | 31.08 | 1,567 (c) | ..... |
| " 12.... | " .... | 125 | 809 | 1.60 | 28.91 | 1,295 (c) | ..... |
| May 8.... | " .... | 115 | 702 | 1.42 | 28.33 | 998 (d) | ..... |
| June 26.... | " .... | 110 | 385 | .84 | 25.66 | 322 | ..... |
| Aug. 18.... | " .... | 56 | 89 | .90 | 23.83 | 81 | ..... |

(a) Measurement made on ice at wading section. Water on ice.
(b) Measurement made on ice at wading section.
(c) Ice broken up but not out of river.
(d) Logs in stream.

## Daily Gauge Height and Discharge of South River near Powassan for 1915-6

Drainage Area, 294 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 24.95 | 256 | 25.83 | 421 | 24.20 | 105 | 27.79 | 750 | 25.00 | 170 | 33.58 | 4050 | 28.87 | 1300 | 26.80 | 645 | 25.16 | 291 | 23.70 | 81 | 23.70 | 81 | 25.54 | 363 |
| 2 | 24.70 | 216 | 25.70 | 395 | 24.29 | 117 | 27.54 | 695 | 25.08 | 178 | 33.95 | 4270 | 30.20 | 2020 | 26.58 | 590 | 24.95 | 256 | 23.66 | 76 | 24.41 | 172 | 25.21 | 300 |
| 3 | 24.70 | 216 | 25.54 | 362 | 24.33 | 113 | 27.29 | 570 | 25.00 | 178 | 32.45 | 3370 | 29.74 | 1740 | 26.41 | 550 | 24.91 | 250 | 23.66 | 76 | 24.83 | 237 | 24.91 | 250 |
| 4 | 24.66 | 210 | 25.41 | 337 | 24.16 | 105 | 26.79 | 525 | 25.00 | 178 | 31.87 | 3030 | 29.28 | 1490 | 26.29 | 520 | 24.91 | 250 | 23.70 | 81 | 24.70 | 216 | 24.79 | 230 |
| 5 | 24.79 | 230 | 25.41 | 337 | 24.12 | 105 | 26.75 | 500 | 24.91 | 163 | 31.37 | 2720 | 28.91 | 1310 | 26.16 | 490 | 24.83 | 237 | 23.75 | 87 | 25.33 | 322 | 24.52 | 203 |
| 6 | 24.95 | 256 | 25.37 | 329 | 24.37 | 123 | 26.58 | 479 | 24.91 | 163 | 31.00 | 2500 | 28.66 | 1210 | 26.04 | 466 | 24.70 | 216 | 23.66 | 76 | 26.08 | 475 | 24.50 | 185 |
| 7 | 25.00 | 264 | 25.29 | 314 | 24.45 | 149 | 26.50 | 446 | 24.91 | 163 | 30.03 | 1920 | 28.50 | 1150 | 25.95 | 446 | 24.70 | 216 | 23.66 | 76 | 25.87 | 430 | 24.46 | 179 |
| 8 | 24.87 | 243 | 25.29 | 314 | 24.54 | 156 | 26.33 | 415 | 24.83 | 163 | 29.74 | 1740 | 28.29 | 1080 | 25.83 | 421 | 24.66 | 210 | 23.70 | 81 | 25.41 | 337 | 24.41 | 172 |
| 9 | 24.83 | 237 | 25.25 | 306 | 24.41 | 143 | 26.25 | 375 | 24.83 | 163 | 29.29 | 1500 | 27.95 | 965 | 25.91 | 438 | 24.66 | 210 | 23.87 | 101 | 25.16 | 291 | 24.33 | 161 |
| 10 | 24.25 | 150 | 25.16 | 291 | 24.41 | 130 | 26.16 | 345 | 24.83 | 163 | 29.04 | 1370 | 27.66 | 880 | 25.95 | 446 | 24.58 | 197 | 23.91 | 106 | 24.83 | 237 | 24.33 | 161 |
| 11 | 24.70 | 216 | 25.00 | 264 | 24.45 | 136 | 26.08 | 335 | 24.91 | 163 | 28.95 | 1330 | 27.83 | 930 | 26.00 | 457 | 24.54 | 191 | 24.00 | 117 | 24.66 | 210 | 24.29 | 155 |
| 12 | 25.04 | 271 | 25.00 | 256 | 24.54 | 143 | 25.91 | 320 | 24.91 | 163 | 28.99 | 1350 | 27.83 | 930 | 25.78 | 411 | 24.50 | 185 | 24.29 | 155 | 24.54 | 191 | 24.25 | 150 |
| 13 | 25.41 | 336 | 25.00 | 240 | 24.66 | 149 | 25.83 | 307 | 24.91 | 163 | 29.54 | 1630 | 27.62 | 865 | 25.45 | 345 | 24.66 | 210 | 24.20 | 143 | 24.37 | 166 | 24.33 | 161 |
| 14 | 25.37 | 330 | 24.91 | 216 | 24.79 | 156 | 25.75 | 295 | 24.75 | 163 | 29.95 | 1870 | 27.29 | 775 | 25.16 | 291 | 24.45 | 178 | 24.04 | 122 | 24.29 | 155 | 25.03 | 269 |
| 15 | 25.25 | 307 | 24.91 | 216 | 24.79 | 166 | 25.70 | 281 | 25.08 | 163 | 31.08 | 2550 | 27.20 | 750 | 25.12 | 284 | 24.04 | 122 | 23.91 | 106 | 24.20 | 145 | 25.25 | 307 |
| 16 | 25.25 | 307 | 24.91 | 216 | 24.83 | 170 | 25.58 | 264 | 24.91 | 170 | 31.00 | 2500 | 27.16 | 740 | 25.24 | 305 | 23.91 | 106 | 23.83 | 97 | 24.16 | 138 | 25.33 | 322 |
| 17 | 25.25 | 307 | 24.83 | 208 | 24.75 | 178 | 25.58 | 264 | 24.87 | 170 | 31.00 | 2500 | 27.49 | 830 | 25.87 | 430 | 23.87 | 101 | 23.83 | 97 | 24.04 | 122 | 25.58 | 371 |
| 18 | 25.12 | 284 | 24.83 | 208 | 24.75 | 185 | 25.50 | 256 | 24.83 | 170 | 30.85 | 2470 | 27.74 | 900 | 26.00 | 457 | 24.08 | 127 | 23.79 | 92 | 24.00 | 117 | 26.00 | 457 |
| 19 | 25.08 | 278 | 24.83 | 208 | 24.83 | 195 | 25.41 | 248 | 24.87 | 170 | 30.45 | 2170 | 27.95 | 965 | 26.12 | 483 | 24.08 | 127 | 23.75 | 91 | 24.04 | 122 | 25.91 | 438 |
| 20 | 25.33 | 322 | 24.83 | 208 | 24.83 | 200 | 25.41 | 240 | 24.91 | 178 | 30.00 | 1900 | 28.33 | 1090 | 26.16 | 492 | 24.08 | 127 | 23.66 | 76 | 24.58 | 197 | 26.95 | 685 |
| 21 | 25.58 | 371 | 24.75 | 193 | 24.83 | 216 | 25.33 | 232 | 24.87 | 188 | 29.70 | 1720 | 28.08 | 1010 | 26.04 | 466 | 24.00 | 117 | 23.66 | 76 | 24.83 | 237 | 27.75 | 905 |
| 22 | 25.45 | 345 | 24.75 | 193 | 27.62 | 865 | 25.33 | 224 | 24.75 | 200 | 30.12 | 1970 | 27.70 | 890 | 26.00 | 457 | 24.04 | 122 | 23.66 | 76 | 24.62 | 203 | 28.41 | 1120 |
| 23 | 25.37 | 329 | 24.75 | 193 | 28.08 | 1010 | 25.33 | 216 | 24.75 | 216 | 31.21 | 2630 | 27.54 | 840 | 25.87 | 430 | 24.00 | 117 | 23.66 | 76 | 24.54 | 191 | 28.08 | 1010 |
| 24 | 25.33 | 322 | 24.75 | 193 | 27.58 | 855 | 25.25 | 200 | 24.83 | 237 | 31.03 | 2520 | 27.37 | 795 | 25.70 | 395 | 24.00 | 117 | 23.66 | 76 | 24.66 | 210 | 27.79 | 915 |
| 25 | 25.29 | 314 | 24.75 | 193 | 27.41 | 805 | 25.08 | 185 | 24.83 | 237 | 30.49 | 2190 | 27.12 | 725 | 25.75 | 405 | 23.95 | 111 | 23.66 | 76 | 24.79 | 230 | 27.62 | 865 |
| 26 | 25.25 | 306 | 24.75 | 193 | 27.58 | 855 | 25.08 | 185 | 24.95 | 256 | 30.08 | 1950 | 26.95 | 685 | 25.66 | 387 | 23.91 | 106 | 23.66 | 76 | 24.87 | 243 | 27.87 | 940 |
| 27 | 25.37 | 329 | 24.75 | 193 | 27.33 | 785 | 25.08 | 185 | 25.33 | 322 | 29.58 | 1650 | 26.70 | 620 | 25.66 | 387 | 23.91 | 106 | 23.66 | 76 | 24.75 | 224 | 28.00 | 980 |
| 28 | 25.62 | 379 | 24.75 | 193 | 28.00 | 845 | 25.08 | 185 | 27.33 | 785 | 29.29 | 1500 | 27.12 | 725 | 25.75 | 405 | 23.87 | 101 | 23.66 | 76 | 24.79 | 230 | 27.96 | 970 |
| 29 | 25.79 | 413 | 24.66 | 193 | 28.25 | 920 | 25.08 | 185 | 28.43 | 1130 | 29.04 | 1370 | 27.33 | 785 | 25.62 | 379 | 23.83 | 97 | 23.63 | 73 | 25.41 | 337 | 27.71 | 895 |
| 30 | 25.91 | 438 | 24.54 | 136 | 28.08 | 905 | ..... | .... | 30.58 | 2250 | 28.74 | 1250 | 27.16 | 740 | 25.45 | 345 | 23.83 | 97 | 23.62 | 71 | 25.79 | 413 | 27.33 | 785 |
| 31 | ..... | ..... | 24.20 | 105 | 27.95 | 845 | ..... | .... | 32.99 | 3690 | ..... | .... | 27.12 | 725 | ..... | ..... | 23.80 | 93 | 23.66 | 76 | ..... | ..... | 27.29 | 775 |

## Monthly Discharge of South River near Powassan for 1915-6

Drainage Area, 294 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November .(1915) | 438 | 150 | 293 | 1.49 | .51 | 1.00 | 1.12 |
| December " | 421 | 105 | 246 | 1.43 | .36 | .84 | .97 |
| January ..(1916) | 1,010 | 105 | 382 | 3.43 | .36 | 1.30 | 1.50 |
| February..... | 750 | 185 | 335 | 2.55 | .63 | 1.14 | 1.23 |
| March..... | 3,690 | 163 | 415 | 12.55 | .55 | 1.41 | 1.63 |
| April..... | 4,270 | 1,250 | 2,183 | 14.52 | 4.25 | 7.43 | 8.29 |
| May..... | 2,020 | 620 | 983 | 6.87 | 2.11 | 3.34 | 3.85 |
| June..... | 645 | 284 | 434 | 2.19 | .97 | 1.48 | 1.65 |
| July..... | 291 | 93 | 161 | .99 | .32 | .55 | .63 |
| August..... | 155 | 71 | 89 | .53 | .24 | .30 | .35 |
| September..... | 475 | 81 | 229 | 1.62 | .28 | .78 | .87 |
| October..... | 1,120 | 150 | 506 | 3.81 | .51 | 1.72 | 1.98 |
| The year..... | 4,270 | 71 | 519 | 14.52 | .24 | 1.77 | 24.09 |

## Spanish River at Espanola

Location—At highway bridge, about 200 yards below Espanola Falls and about the same distance below the Spanish River Pulp and Paper Mills, in the Town of Espanola, Township of Merritt, Sudbury District.

Records Available—Discharge measurements from March, 1914, to October, 1916. Daily gauge heights from May 6, 1915, to October 31, 1916.

Drainage Area—4,490 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, fastened to pile near left abutment on upstream side of bridge. Zero of gauge (elev. 19.00 feet) is referred to bench mark (elev. 25.38 feet) located on top of nose of left abutment.

Channel—Above the station the water from the Falls and Power House flows into a pool about 700 feet wide and then narrows down to 225 feet at the bridge, thence flowing straight for about 1,000 feet. Both banks are high, rocky, wooded, and will not overflow. The bed of the stream is composed of clay and boulders, practically permanent. The current is fast, one channel existing at low stages. At high stages the stream flows through two channels, separated by the centre pier of the bridge.

Discharge Measurements—Made from highway bridge with a Price current meter. Occasional check measurements are made at Webbwood bridge.

Regulation—The paper plant uses all the water coming down the river at low stages during the summer, discharging through the tail race and past the section. The river is used throughout the spring and summer for log driving.

Winter Flow—Ice forms about one mile below the station, but remains open at the gauging section during the entire year.

Accuracy—Conditions at station are not very favorable for making accurate discharge measurements. The discharge relation is affected by logs during the log driving period. As there are not sufficient records available to compute discharges for that period, the open water rating curve was assumed applicable.

Observer—Thos. Lynch, Espanola.

### Discharge Measurements of Spanish River at Espanola in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 17.... | Murray, W. S.. | 228 | 3,116 | 1.69 | 23.56 | 5,279 | ..... |
| Dec. 7.... | " .. | 228 | 3,493 | 2.21 | 25.25 | 2,710 | ..... |
| 1916 | " .. | | | | | | |
| Jan. 12.... | " .. | 220 | 2,960 | 1.18 | 22.91 | 3,484 (a) | ..... |
| Feb. 9.... | " .. | 217 | 2,619 | .93 | 21.58 | 2,424 (b) | ..... |
| Mar. 9.... | " .. | 214 | 2,831 | 1.09 | 22.41 | 3,087 (c) | ..... |
| Apr. 25.... | " .. | 228 | 7,233 | 4.08 | 37.84 | 29,503 | ..... |
| May 30.... | " .. | 228 | 3,840 | 2.66 | 26.75 | 10,231 (d) | ..... |
| June 7.... | " .. | 234 | 3,543 | 1.77 | 24.16 | 6,270 (e) | ..... |
| Aug. 24.... | " .. | 198 | 2,681 | 1.07 | 22.00 | 2,851 | ..... |
| " 24.... | " .. | 212 | 3,205 | .80 | 22.00 | 2,575 (e) | ..... |
| Oct. 18.... | " .. | 246 | 2,599 | 1.06 | 21.37 | 2,750 | ..... |
| " 18.... | " .. | 193 | 3,026 | .85 | 21.35 | 2,504 (e) | ..... |

(a) Ice on river 300 ft. below section.
(b) Side and back current at centre pier. Ice on part of section.
(c) Ice on part of section.
(d) Logs on control.
(e) Reading taken at Webbwood.

## Daily Gauge Height and Discharge of Spanish River at Espanola for 1915-6

Drainage Area 4,490 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 23.29 | 4580 | 25.16 | 7560 | 23.16 | 4390 | 22.33 | 3280 | 22.50 | 3500 | 27.95 | 12220 | 34.83 | 24090 | 26.28 | 9380 | 25.98 | 8870 | 21.75 | 2550 | 21.85 | 2670 | 21.08 | 1750 |
| 2 | 22.66 | 3710 | 25.12 | 7490 | 23.08 | 4270 | 22.31 | 3250 | 22.41 | 3380 | 29.75 | 15280 | 34.00 | 22600 | 25.90 | 8740 | 26.08 | 9040 | 21.71 | 2500 | 21.83 | 2650 | 21.50 | 2250 |
| 3 | 22.50 | 3500 | 25.16 | 7560 | 23.25 | 4520 | 22.25 | 3180 | 22.35 | 3300 | 30.83 | 17110 | 33.83 | 22290 | 25.83 | 8630 | 25.66 | 8360 | 22.00 | 2850 | 21.79 | 2600 | 21.46 | 2200 |
| 4 | 22.27 | 3200 | 25.33 | 7830 | 22.83 | 3930 | 22.20 | 3110 | 22.25 | 3180 | 30.62 | 16750 | 33.33 | 21390 | 25.17 | 7570 | 25.38 | 7910 | 22.08 | 2950 | 21.79 | 2600 | 21.41 | 2140 |
| 5 | 22.46 | 3450 | 25.08 | 7430 | 23.00 | 4150 | 22.18 | 3080 | 21.12 | 1790 | 31.08 | 17540 | 33.00 | 20800 | 24.41 | 6360 | 24.87 | 7090 | 22.08 | 2950 | 21.83 | 2650 | 21.45 | 2190 |
| 6 | 22.39 | 3360 | 25.47 | 8050 | 23.25 | 4060 | 21.75 | 2550 | 22.58 | 3600 | 31.25 | 17820 | 32.75 | 20370 | 23.83 | 5430 | 24.58 | 6630 | 21.91 | 2740 | 21.83 | 2650 | 21.50 | 2250 |
| 7 | 22.25 | 3180 | 25.41 | 7960 | 23.08 | 3960 | 21.66 | 2440 | 22.83 | 3930 | 31.35 | 17960 | 32.50 | 19950 | 24.50 | 6500 | 24.08 | 5830 | 22.15 | 3040 | 21.91 | 2740 | 21.37 | 2090 |
| 8 | 22.80 | 3890 | 25.39 | 7920 | 23.08 | 3960 | 21.62 | 2390 | 22.54 | 3550 | 31.33 | 17960 | 32.50 | 19950 | 24.39 | 6320 | 23.91 | 5560 | 22.10 | 2980 | 21.95 | 2790 | 21.03 | 1690 |
| 9 | 23.31 | 4620 | 24.73 | 6870 | 22.91 | 3760 | 21.60 | 2370 | 22.29 | 3230 | 31.16 | 17670 | 32.00 | 19100 | 24.50 | 6500 | 23.58 | 5030 | 22.04 | 2900 | 21.95 | 2790 | 20.87 | 1510 |
| 10 | 23.27 | 4560 | 24.54 | 6560 | 22.91 | 3700 | 21.56 | 2320 | 22.12 | 3010 | 33.33 | 21390 | 31.50 | 18250 | 24.54 | 6560 | 23.58 | 5030 | 22.04 | 2900 | 22.12 | 3010 | 21.08 | 1750 |
| 11 | 23.35 | 4680 | 24.42 | 6370 | 22.83 | 3560 | 21.45 | 2190 | 21.98 | 2830 | 29.83 | 15410 | 31.20 | 17740 | 24.35 | 6260 | 23.75 | 5300 | 22.06 | 2930 | 22.08 | 2950 | 21.41 | 2140 |
| 12 | 23.35 | 4680 | 24.68 | 6790 | 22.91 | 3500 | 21.33 | 2050 | 20.10 | 755 | 29.74 | 15260 | 30.95 | 17320 | 25.62 | 8290 | 23.70 | 5220 | 22.08 | 2950 | 21.91 | 2740 | 21.41 | 2140 |
| 13 | 24.00 | 5700 | 24.54 | 6560 | 22.83 | 3370 | 20.66 | 1290 | 21.54 | 2300 | 29.45 | 14760 | 30.75 | 16980 | 25.29 | 7760 | 23.52 | 4930 | 22.00 | 2850 | 21.83 | 2650 | 21.16 | 1840 |
| 14 | 23.47 | 4860 | 24.43 | 6390 | 22.75 | 3340 | 21.35 | 2070 | 21.87 | 2690 | 29.70 | 15190 | 29.00 | 14000 | 25.20 | 7620 | 23.33 | 4640 | 22.08 | 2950 | 22.15 | 3040 | 21.25 | 1950 |
| 15 | 23.54 | 4960 | 24.54 | 6560 | 22.66 | 3300 | 21.33 | 2050 | 22.00 | 2850 | 31.66 | 18520 | 30.00 | 15700 | 25.16 | 7560 | 23.22 | 4480 | 22.06 | 2930 | 22.25 | 3180 | 21.66 | 2440 |
| 16 | 23.56 | 5000 | 24.45 | 6420 | 22.64 | 3270 | 21.27 | 1970 | 22.16 | 3060 | 31.16 | 17670 | 30.00 | 15700 | 24.97 | 7250 | 23.08 | 4270 | 22.06 | 2930 | 22.25 | 3180 | 21.95 | 2790 |
| 17 | 23.54 | 4960 | 24.31 | 6200 | 22.62 | 3240 | 21.25 | 1950 | 22.04 | 2900 | 32.00 | 19100 | 29.60 | 15020 | 25.45 | 8020 | 22.83 | 3930 | 22.04 | 2900 | 20.25 | 885 | 21.74 | 2540 |
| 18 | 23.43 | 4800 | 24.12 | 5890 | 22.54 | 3210 | 21.25 | 1950 | 21.87 | 2690 | 33.50 | 21700 | 29.00 | 14000 | 26.40 | 9580 | 22.54 | 3550 | 21.95 | 2790 | 21.62 | 2390 | 21.16 | 1840 |
| 19 | 23.29 | 4580 | 23.83 | 5430 | 22.58 | 3180 | 21.18 | 1870 | 20.25 | 885 | 33.75 | 22150 | 29.00 | 14000 | 27.12 | 10800 | 22.37 | 3330 | 21.91 | 2740 | 21.58 | 2350 | 21.00 | 1650 |
| 20 | 23.83 | 5430 | 24.00 | 5700 | 22.56 | 3180 | 20.54 | 1170 | 21.79 | 2600 | 34.00 | 22600 | 28.75 | 13580 | 28.41 | 13000 | 22.18 | 3080 | 21.91 | 2740 | 21.66 | 2440 | 21.91 | 2740 |
| 21 | 23.41 | 4760 | 23.91 | 5560 | 22.33 | 3280 | 21.75 | 2550 | 21.91 | 2740 | 34.00 | 22600 | 28.00 | 12300 | 28.00 | 12300 | 22.04 | 2900 | 21.91 | 2740 | 21.66 | 2440 | 21.96 | 2800 |
| 22 | 24.00 | 5700 | 23.83 | 5430 | 22.83 | 3930 | 21.81 | 2620 | 21.95 | 2790 | 34.16 | 22890 | 27.75 | 11880 | 27.79 | 11940 | 21.91 | 2740 | 21.87 | 2690 | 21.41 | 2140 | 21.33 | 2050 |
| 23 | 23.66 | 5160 | 23.81 | 5400 | 22.89 | 4010 | 22.22 | 3140 | 22.00 | 2850 | 34.33 | 23190 | 27.50 | 11450 | 27.74 | 11860 | 21.91 | 2740 | 21.95 | 2790 | 21.50 | 2250 | 23.50 | 4900 |
| 24 | 23.21 | 4460 | 23.54 | 4960 | 23.41 | 4760 | 22.29 | 3230 | 22.04 | 2900 | 34.58 | 23640 | 26.83 | 10310 | 27.54 | 11520 | 22.00 | 2850 | 22.00 | 2850 | 21.41 | 2140 | 21.83 | 2650 |
| 25 | 23.35 | 4680 | 22.75 | 3820 | 23.29 | 4590 | 22.22 | 3140 | 21.91 | 2740 | 34.75 | 23950 | 25.75 | 8500 | 27.20 | 10940 | 22.00 | 2850 | 21.91 | 2740 | 21.41 | 2140 | 22.33 | 3280 |
| 26 | 23.45 | 4820 | 23.08 | 4270 | 23.16 | 4390 | 22.22 | 3140 | 20.33 | 960 | 35.50 | 25300 | 25.25 | 7700 | 26.60 | 9920 | 22.00 | 2850 | 21.87 | 2690 | 21.50 | 2250 | 23.91 | 5560 |
| 27 | 23.75 | 5300 | 23.08 | 4270 | 23.16 | 4390 | 22.08 | 2950 | 22.33 | 3280 | 35.66 | 25590 | 25.00 | 7300 | 26.74 | 10160 | 22.08 | 2950 | 21.83 | 2650 | 21.46 | 2200 | 24.00 | 5700 |
| 28 | 23.91 | 5560 | 23.16 | 4390 | 23.12 | 4330 | 22.50 | 3500 | 23.72 | 5250 | 35.16 | 24690 | 26.50 | 9750 | 26.58 | 9890 | 22.29 | 3230 | 21.83 | 2650 | 21.41 | 2140 | 23.91 | 5560 |
| 29 | 25.50 | 8100 | 23.12 | 4330 | 22.95 | 4080 | 22.58 | 3600 | 22.95 | 4080 | 35.00 | 24400 | 26.66 | 10020 | 26.29 | 9390 | 22.29 | 3230 | 21.83 | 2650 | 21.41 | 2140 | 24.91 | 7160 |
| 30 | 25.16 | 7560 | 23.16 | 4390 | 22.90 | 4020 | ..... | ..... | 23.62 | 5090 | 35.50 | 25300 | 26.66 | 10020 | 26.25 | 9320 | 22.45 | 3440 | 21.89 | 2720 | 21.41 | 2140 | 24.83 | 7030 |
| 31 | ..... | .... | 23.21 | 4460 | 22.90 | 4020 | ..... | ..... | 25.37 | 7890 | ..... | ..... | 26.64 | 9990 | ..... | ..... | 22.16 | 3060 | 21.83 | 2650 | ..... | ..... | 24.33 | 6230 |

## Monthly Discharge of Spanish River at Espanola for 1915-6

Drainage Area, 4,490 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 8,100 | 3,180 | 4,793 | 1.80 | .71 | 1.07 | 1.19 |
| December " | 8,050 | 3,820 | 6,091 | 1.79 | .85 | 1.36 | 1.57 |
| January...(1916) | 4,760 | 3,180 | 3,860 | 1.06 | .71 | .86 | .99 |
| February ..... | 3,600 | 1,170 | 2,566 | .80 | .26 | .57 | .61 |
| March..... | 7,890 | 755 | 3,116 | 1.76 | .17 | .69 | .80 |
| April..... | 25,590 | 12,220 | 19,854 | 5.70 | 2.72 | 4.42 | 4.93 |
| May ..... | 24,090 | 7,300 | 15,227 | 5.37 | 1.63 | 3.39 | 3.91 |
| June ..... | 13,000 | 5,430 | 8,846 | 2.90 | 1.21 | 1.97 | 2.20 |
| July..... | 9,040 | 2,740 | 4,675 | 2.01 | .61 | 1.04 | 1.20 |
| August..... | 3,040 | 2,500 | 2,803 | .68 | .56 | .62 | .71 |
| September..... | 3,180 | 885 | 2,498 | .71 | .20 | .56 | .62 |
| October..... | 7,160 | 1,510 | 3,058 | 1.59 | .33 | .68 | .78 |
| The year ..... | 25,590 | 885 | 6,442 | 5.70 | .20 | 1.43 | 19.46 |

## Sturgeon River at Smoky Falls

**Location**—At the highway bridge at Smoky Falls Post Office, and two miles above the Smoky Falls, Township of Springer, Nipissing District.

**Records Available**—Discharge measurements, August, 1912, to October, 1916. Daily gauge heights, January 12 to 31, 1914, and March 15, 1914, to October 31, 1916.

**Drainage Area**—2,250 square miles.

**Gauge**—Vertical steel staff with enamelled face, graduated in feet and inches, and attached to a wooden pile on the right, upstream side of the bridge. The zero on the gauge (elevation 32.00) is referred to a bench mark (elevation 53.47) painted on a rock on the right bank of the river, about 175 feet above the bridge.

**Channel**—Straight for about 700 feet above and about 1 mile below the station. The banks are fairly high, clean, sandy and not liable to overflow. The bed of the stream is composed of clay and sand, slightly shifting. The current is fast and smooth, flowing through six channels, formed by bridge piers and abutments.

**Discharge Measurements**—Made from highway bridge with a Price current meter.

**Regulation**—Dams above are used for power and log driving purposes.

**Winter Flow**—During the winter months the river is covered with ice, and measurements are made through the ice to determine the winter discharge. The relation of gauge height to discharge is seriously affected by ice.

**Accuracy**—The open water rating curve is fairly well defined. The relation of gauge height to discharge is affected during the log-driving season.

**Observer**—A. Pineault, Smoky Falls.

### Discharge Measurements of Sturgeon River at Smoky Falls in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Dec. 1.... | Murray, W. S .. | 210 | 2,293 | 1.84 | 35.58 | 4,208 | ..... |
| 1916 | | | | | | | |
| Jan. 27.... | " .. | 210 | 1,663 | 1.10 | 33.74 | 1,843 (a) | ..... |
| Feb. 25.... | " .. | 205 | 1,622 | 1.18 | 33.91 | 1,913 (a) | ..... |
| Mar. 24.... | " .. | 205 | 1,538 | 1.29 | 34.08 | 1,979 (a) | ..... |
| May 5.... | " .. | 210 | 3,410 | 4.70 | 40.91 | 16,027 | ..... |

(a) Ice measurement.

## Daily Gauge Height and Discharge of Sturgeon River at Smoky Falls for 1915-6

Drainage Area 2,250 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 34.00 | 2090 | 35.58 | 4380 | 33.89 | 1970 | 33.83 | 1905 | 34.08 | 2185 | 36.12 | 5255 | 41.12 | 15620 | 36.66 | 6170 | 34.83 | 3220 | 33.74 | 1800 | 33.20 | 1310 | 32.71 | 975 |
| 2 | 34.00 | 2090 | 35.58 | 4480 | 33.79 | 1860 | 33.75 | 1815 | 34.08 | 2185 | 36.62 | 6105 | 41.25 | 15930 | 36.45 | 5820 | 34.83 | 3220 | 33.45 | 1510 | 33.08 | 1210 | 32.87 | 1060 |
| 3 | 34.00 | 2090 | 35.45 | 4170 | 33.75 | 1815 | 33.75 | 1815 | 34.08 | 2185 | 36.54 | 5970 | 41.25 | 15930 | 36.37 | 5680 | 34.99 | 3460 | 33.20 | 1310 | 32.79 | 1010 | 32.91 | 1090 |
| 4 | 33.91 | 1990 | 35.33 | 3980 | 33.66 | 1720 | 33.75 | 1815 | 34.08 | 2185 | 36.41 | 5745 | 41.12 | 15620 | 36.25 | 5480 | 34.95 | 3400 | 33.29 | 1380 | 32.70 | 970 | 32.91 | 1090 |
| 5 | 33.83 | 1905 | 35.54 | 4315 | 33.79 | 1860 | 33.75 | 1815 | 34.08 | 2185 | 36.41 | 5745 | 40.91 | 15110 | 36.25 | 5480 | 34.70 | 3020 | 33.29 | 1380 | 33.16 | 1280 | 32.91 | 1090 |
| 6 | 33.70 | 1760 | 35.41 | 4105 | 33.75 | 1815 | 33.83 | 1905 | 34.08 | 2185 | 36.33 | 5610 | 40.50 | 14130 | 36.04 | 5120 | 34.58 | 2850 | 33.50 | 1560 | 33.10 | 1230 | 33.00 | 1150 |
| 7 | 33.58 | 1640 | 35.21 | 3785 | 33.66 | 1720 | 33.83 | 1905 | 34.08 | 2185 | 36.42 | 5765 | 40.33 | 13720 | 35.95 | 4970 | 34.58 | 2850 | 33.41 | 1480 | 33.08 | 1210 | 32.95 | 1120 |
| 8 | 33.50 | 1560 | 35.00 | 3470 | 33.58 | 1640 | 33.75 | 1815 | 34.08 | 2185 | 36.33 | 5610 | 40.16 | 13310 | 35.91 | 4910 | 34.70 | 3020 | 33.62 | 1680 | 33.03 | 1170 | 32.91 | 1090 |
| 9 | 33.50 | 1560 | 34.83 | 3215 | 33.58 | 1640 | 33.75 | 1815 | 34.16 | 2280 | 36.33 | 5610 | 39.91 | 12710 | 35.87 | 4840 | 34.54 | 2800 | 33.95 | 2030 | 33.00 | 1150 | 32.91 | 1090 |
| 10 | 33.41 | 1480 | 34.66 | 2965 | 33.58 | 1640 | 33.83 | 1905 | 34.16 | 2280 | 36.41 | 5745 | 39.58 | 11940 | 35.83 | 4780 | 34.45 | 2670 | 33.99 | 2080 | 32.70 | 970 | 32.91 | 1090 |
| 11 | 33.41 | 1480 | 33.54 | 2795 | 33.58 | 1640 | 33.75 | 1815 | 34.08 | 2185 | 36.62 | 6105 | 39.33 | 11380 | 35.83 | 4780 | 34.41 | 2610 | 33.58 | 1640 | 32.58 | 910 | 32.79 | 1020 |
| 12 | 33.54 | 1600 | 34.45 | 2680 | 33.58 | 1640 | 33.75 | 1815 | 34.00 | 2090 | 36.79 | 6395 | 39.08 | 10840 | 35.91 | 4910 | 34.50 | 2740 | 33.54 | 1600 | 32.50 | 870 | 32.81 | 1030 |
| 13 | 33.70 | 1760 | 34.41 | 2615 | 33.58 | 1640 | 33.95 | 2035 | 34.00 | 2090 | 37.29 | 7300 | 38.95 | 10560 | 36.20 | 5390 | 34.41 | 2610 | 33.54 | 1600 | 32.50 | 870 | 32.83 | 1040 |
| 14 | 33.95 | 2035 | 34.41 | 2615 | 33.58 | 1640 | 34.00 | 2090 | 34.00 | 2090 | 37.45 | 7605 | 38.41 | 9450 | 35.83 | 4780 | 34.29 | 2450 | 33.58 | 1640 | 32.54 | 890 | 32.87 | 1060 |
| 15 | 33.95 | 2035 | 34.41 | 2615 | 33.50 | 1560 | 34.00 | 2090 | 33.91 | 1990 | 37.75 | 8175 | 38.87 | 10400 | 35.75 | 4650 | 34.25 | 2400 | 33.50 | 1560 | 32.62 | 930 | 32.91 | 1090 |
| 16 | 33.83 | 1905 | 34.37 | 2560 | 33.50 | 1560 | 34.00 | 2090 | 33.91 | 1990 | 37.70 | 8080 | 38.54 | 9710 | 35.87 | 4840 | 34.12 | 2230 | 33.54 | 1600 | 32.87 | 1060 | 32.91 | 1090 |
| 17 | 33.79 | 1860 | 34.33 | 2500 | 33.50 | 1560 | 33.91 | 1990 | 33.91 | 1990 | 37.91 | 8480 | 38.37 | 9470 | 35.70 | 4570 | 34.08 | 2190 | 33.62 | 1680 | 33.04 | 1180 | 33.12 | 1250 |
| 18 | 33.66 | 1720 | 34.33 | 2500 | 33.41 | 1480 | 33.91 | 1990 | 33.91 | 1990 | 38.37 | 9370 | 38.12 | 8880 | 35.36 | 4510 | 34.00 | 3090 | 33.50 | 1560 | 33.08 | 1210 | 33.16 | 1280 |
| 19 | 33.66 | 1720 | 34.29 | 2445 | 33.41 | 1480 | 33.91 | 1990 | 33.91 | 1990 | 38.70 | 10040 | 37.95 | 8560 | 35.66 | 4510 | 33.91 | 1990 | 33.41 | 1480 | 32.91 | 1090 | 33.25 | 1350 |
| 20 | 33.87 | 1945 | 34.25 | 2395 | 33.41 | 1480 | 33.91 | 1990 | 33.91 | 1990 | 38.75 | 10145 | 37.87 | 8400 | 35.37 | 4040 | 33.75 | 1820 | 33.33 | 1410 | 32.91 | 1090 | 33.66 | 1720 |
| 21 | 34.41 | 2615 | 34.16 | 2280 | 33.42 | 1490 | 33.91 | 1990 | 33.91 | 1990 | 38.91 | 10480 | 37.48 | 7660 | 35.29 | 3910 | 33.75 | 1820 | 33.37 | 1450 | 32.71 | 975 | 34.37 | 2420 |
| 22 | 34.33 | 2500 | 34.08 | 2185 | 33.54 | 1600 | 33.91 | 1990 | 33.91 | 1990 | 39.29 | 11290 | 37.33 | 7380 | 35.25 | 3850 | 33.66 | 1720 | 33.50 | 1560 | 32.66 | 950 | 34.66 | 2960 |
| 23 | 33.83 | 1905 | 34.08 | 2185 | 33.54 | 1600 | 33.83 | 1905 | 34.08 | 2185 | 39.79 | 12425 | 37.41 | 7530 | 35.20 | 3770 | 33.87 | 1950 | 34.04 | 2140 | 32.66 | 950 | 34.66 | 2960 |
| 24 | 33.79 | 1860 | 34.00 | 2090 | 33.58 | 1640 | 33.83 | 1905 | 34.08 | 2185 | 39.91 | 12715 | 37.29 | 7300 | 35.16 | 3710 | 33.99 | 2080 | 33.83 | 1900 | 32.66 | 950 | 34.66 | 2960 |
| 25 | 34.00 | 2090 | 34.00 | 2090 | 33.66 | 1720 | 33.91 | 1990 | 34.08 | 2185 | 40.12 | 13220 | 37.16 | 7060 | 35.12 | 3650 | 34.03 | 2130 | 33.54 | 1600 | 32.66 | 950 | 34.66 | 2960 |
| 26 | 33.91 | 1980 | 34.00 | 2090 | 33.66 | 1720 | 33.91 | 1990 | 34.00 | 2090 | 40.37 | 13820 | 37.00 | 6770 | 35.08 | 3590 | 33.74 | 1800 | 33.50 | 1560 | 32.66 | 950 | 34.75 | 3090 |
| 27 | 34.28 | 2435 | 33.91 | 1990 | 33.75 | 1815 | 34.04 | 2140 | 34.04 | 2140 | 40.91 | 15115 | 36.87 | 6540 | 35.04 | 3530 | 33.54 | 1600 | 33.45 | 1510 | 32.71 | 975 | 34.83 | 3220 |
| 28 | 34.95 | 3395 | 33.91 | 1990 | 33.75 | 1815 | 34.04 | 2140 | 34.16 | 2280 | 41.08 | 15520 | 36.75 | 6320 | 35.00 | 3470 | 33.50 | 1560 | 33.33 | 1410 | 32.75 | 995 | 34.79 | 3160 |
| 29 | 35.16 | 3710 | 34.00 | 2090 | 33.75 | 1615 | 34.08 | 2185 | 34.37 | 2560 | 41.12 | 15620 | 36.66 | 6170 | 35.00 | 3470 | 33.50 | 1560 | 33.16 | 1280 | 32.75 | 995 | 34.83 | 3220 |
| 30 | 35.45 | 4170 | 33.87 | 1945 | 33.75 | 1815 | ..... | ..... | 34.95 | 3395 | 41.08 | 15520 | 36.75 | 6320 | 34.45 | 2670 | 33.41 | 1480 | 33.20 | 1310 | 32.66 | 950 | 34.83 | 3220 |
| 31 | ..... | ..... | 33.79 | 1860 | 33.83 | 1905 | ..... | ..... | 35.41 | 4105 | ..... | ..... | 36.75 | 6320 | ..... | .... | 33.62 | 1680 | 33.04 | 2140 | ..... | ..... | 34.83 | 3220 |

## Monthly Discharge of Sturgeon River at Smoky Falls for 1915-6

Drainage Area 2,250 Square Miles

| Month | Discharge in Second-feet. | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area. |
| November (1915) | 4,170 | 1,480 | 2,096 | 1.85 | .66 | .93 | 1.04 |
| December " | 4,380 | 1,860 | 2,815 | 1.95 | .83 | 1.25 | 1.44 |
| January .. (1916) | 1,970 | 1,480 | 1,687 | .88 | .66 | .75 | .86 |
| February ..... | 2,185 | 1,815 | 1,953 | .97 | .81 | .87 | .94 |
| March..... | 4,105 | 1,990 | 2,243 | 1.82 | .88 | 1.00 | 1.15 |
| April..... | 15,620 | 5,255 | 9,153 | 6.94 | 2.34 | 4.07 | 4.54 |
| May..... | 15,930 | 6,170 | 10,224 | 7.08 | 2.74 | 4.54 | 5.23 |
| June ..... | 6,170 | 2,670 | 4,528 | 2.74 | 1.19 | 2.01 | 2.24 |
| July..... | 3,460 | 1,480 | 2,355 | 1.54 | .66 | 1.05 | 1.21 |
| August..... | 2,140 | 1,180 | 1,577 | .95 | .48 | .70 | .81 |
| September..... | 1,310 | 870 | 1,042 | .58 | .39 | .46 | .51 |
| October..... | 3,220 | 975 | 1,812 | 1.43 | .43 | .81 | .93 |
| The year ..... | 15,930 | 870 | 3,450 | 7.08 | .39 | 1.53 | 20.83 |

## Vermilion River near Whitefish

Location—At the old highway bridge 50 feet above the rapids, 300 feet north of C.P.R. bridge, and two miles east of the Town of Whitefish, Township of Graham, Sudbury District.

Records Available—Discharge measurements from August, 1913, to October, 1916. Daily gauge heights from June 11, 1915, to October 31, 1916.

Drainage Area—1,580 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, attached to pile at the left abutment of old highway bridge. Zero of gauge (elev. 25.00 feet) is referred to bench mark (elev. 38.39) painted on rock on right bank 15 feet above gauging station.

Channel and Control—Straight for about 300 feet above and 700 feet below the station. Both banks are high, rocky and wooded, and not liable to overflow. Bed of stream is rocky and permanent, current is swift, two channels existing at all stages on account of the centre pier of the bridge. Log jams sometimes occur on the rapids during low flows, causing back water at the station.

Discharge Measurements—Made from old highway bridge with a Price current meter.

Winter Flow—On account of the fast current the channel at gauging station remains open during the winter months, ice forming at banks, allowance for this being made in estimates.

Accuracy—Rating curve fairly well defined between gauge heights 27.00 feet and 32.00 feet. As there are not sufficient data available for computing the discharge during the log driving period the open water curve was assumed applicable.

Observer—A. Boucher, Whitefish.

### Discharge Measurements of Vermilion River near Whitefish in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 22 .... | Murray, W. S.. | 169 | 853 | 1.97 | 28.35 | 1,685 | ..... |
| Dec. 4 .... | " .. | 184 | 1,069 | 2.73 | 29.58 | 2,626(a) | ..... |
| 1916 | | | | | | | |
| Jan. 28 .... | " .. | 144 | 735 | 1.52 | 27.74 | 1,116(b) | ..... |
| Feb. 5 .... | " .. | 104 | 730 | 1.38 | 27.76 | 1,008(c) | ..... |
| Mar. 7 .... | " .. | 135 | 594 | 1.32 | 27.33 | 784(d) | ..... |
| April 13 .... | " .. | 196 | 1,397 | 4.40 | 31.26 | 6,139 | ..... |
| May 9 .... | " .. | 206 | 1,465 | 5.13 | 31.57 | 7,511 | ..... |
| June 8 .... | " .. | 188 | 928 | 2.37 | 28.82 | 2,207 | ..... |

(a) Floating ice at section.
(b) Section partly ice-covered.
(c) Section partly ice-covered and at gauge.
(d) Ice measurement.

## Daily Gauge Height and Discharge of Vermilion River near Whitefish for 1915-6

Drainage Area 1,580 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 28.16 | 1420 | 28.99 | 2380 | 27.99 | 1250 | 27.74 | 1025 | 27.49 | 805 | 27.83 | 1105 | 33.95 | 13120 | 28.78 | 2130 | 29.08 | 2500 | 27.25 | 635 | 26.16 | 152 | 26.16 | 152 |
| 2 | 28.08 | 1340 | 29.83 | 3580 | 27.91 | 1180 | 27.74 | 1025 | 27.41 | 745 | 29.66 | 3320 | 33.61 | 12240 | 28.70 | 2030 | 29.00 | 2390 | 27.08 | 515 | 26.16 | 152 | 26.16 | 152 |
| 3 | 28.16 | 1420 | 29.74 | 3440 | 27.91 | 1180 | 27.74 | 1025 | 27.41 | 745 | 30.33 | 4465 | 35.45 | 11820 | 28.43 | 1710 | 28.91 | 2280 | 26.33 | 186 | 26.16 | 152 | 26.16 | 152 |
| 4 | 28.24 | 1500 | 29.58 | 3200 | 27.91 | 1180 | 27.74 | 1025 | 27.41 | 745 | 31.16 | 6100 | 33.32 | 11480 | 28.45 | 1740 | 28.91 | 2280 | 26.75 | 335 | 26.33 | 186 | 26.16 | 152 |
| 5 | 28.25 | 1510 | 28.99 | 2380 | 27.83 | 1105 | 27.74 | 1025 | 27.41 | 745 | 31.33 | 6480 | 33.15 | 11040 | 28.45 | 1740 | 28.91 | 2280 | 26.50 | 220 | 26.50 | 220 | 26.16 | 152 |
| 6 | 28.25 | 1510 | 28.83 | 2185 | 27.83 | 1105 | 27.74 | 1025 | 27.41 | 745 | 31.49 | 6845 | 32.95 | 10520 | 28.28 | 1550 | 28.91 | 2280 | 26.50 | 220 | 26.50 | 220 | 26.16 | 152 |
| 7 | 28.29 | 1550 | 28.83 | 2185 | 27.83 | 1105 | 27.74 | 1025 | 27.41 | 745 | 31.49 | 6845 | 31.53 | 6940 | 28.20 | 1460 | 28.91 | 2280 | 26.50 | 220 | 26.50 | 220 | 26.25 | 170 |
| 8 | 28.24 | 1500 | 28.74 | 2080 | 27.74 | 1025 | 27.74 | 1025 | 27.41 | 745 | 31.49 | 6845 | 31.28 | 6370 | 29.08 | 2500 | 29.08 | 2500 | 26.50 | 220 | 26.50 | 220 | 26.25 | 170 |
| 9 | 28.24 | 1500 | 28.66 | 1980 | 27.74 | 1025 | 27.74 | 1025 | 27.41 | 745 | 31.41 | 6665 | 31.03 | 5820 | 29.08 | 2500 | 29.08 | 2500 | 26.50 | 220 | 26.58 | 252 | 26.25 | 170 |
| 10 | 28.24 | 1500 | 28.66 | 1980 | 27.74 | 1025 | 27.74 | 1025 | 27.41 | 745 | 31.33 | 6480 | 30.95 | 5650 | 29.08 | 2500 | 29.00 | 2390 | 26.41 | 202 | 26.58 | 252 | 26.25 | 170 |
| 11 | 28.24 | 1500 | 28.49 | 1780 | 27.74 | 1025 | 27.66 | 955 | 27.41 | 745 | 31.24 | 6280 | 30.78 | 5320 | 29.83 | 3580 | 29.00 | 2390 | 26.50 | 220 | 26.58 | 252 | 26.25 | 170 |
| 12 | 28.24 | 1500 | 28.41 | 1690 | 27.74 | 1025 | 27.66 | 955 | 27.41 | 745 | 31.33 | 6480 | 30.70 | 5170 | 29.75 | 3450 | 28.91 | 2280 | 26.75 | 335 | 26.50 | 220 | 26.25 | 170 |
| 13 | 28.33 | 1605 | 28.41 | 1690 | 27.74 | 1025 | 27.66 | 955 | 27.41 | 745 | 31.33 | 6480 | 30.61 | 5000 | 29.66 | 3320 | 28.83 | 2190 | 26.75 | 335 | 26.50 | 220 | 26.25 | 170 |
| 14 | 28.33 | 1605 | 28.41 | 1690 | 27.74 | 1025 | 27.66 | 955 | 27.41 | 745 | 31.49 | 6845 | 30.45 | 4700 | 29.66 | 3320 | 28.83 | 2190 | 26.66 | 296 | 26.58 | 252 | 25.25 | 170 |
| 15 | 28.33 | 1605 | 28.33 | 1605 | 27.74 | 1025 | 27.66 | 955 | 27.41 | 745 | 31.74 | 7425 | 30.28 | 4370 | 29.66 | 3320 | 28.66 | 1980 | 26.66 | 296 | 26.50 | 220 | 26.25 | 170 |
| 16 | 28.33 | 1605 | 28.33 | 1605 | 27.74 | 1025 | 27.66 | 955 | 27.41 | 745 | 31.83 | 7640 | 30.20 | 4220 | 29.66 | 3320 | 28.58 | 1890 | 26.58 | 252 | 26.50 | 220 | 26.33 | 186 |
| 17 | 28.33 | 1605 | 28.33 | 1605 | 27.74 | 1025 | 27.66 | 955 | 27.33 | 690 | 31.91 | 7835 | 29.95 | 3780 | 29.66 | 3320 | 28.50 | 1790 | 26.58 | 252 | 26.33 | 186 | 26.33 | 186 |
| 18 | 28.35 | 1605 | 28.24 | 1500 | 27.74 | 1025 | 27.66 | 955 | 27.33 | 690 | 31.91 | 7835 | 29.86 | 3630 | 29.75 | 3450 | 28.50 | 1790 | 26.50 | 220 | 26.16 | 152 | 26.33 | 186 |
| 19 | 28.33 | 1605 | 28.16 | 1420 | 27.74 | 1025 | 27.66 | 955 | 27.16 | 570 | 31.91 | 7835 | 29.78 | 3500 | 29.83 | 3580 | 28.50 | 1790 | 26.50 | 220 | 16.16 | 152 | 26.41 | 222 |
| 20 | 28.33 | 1605 | 28.16 | 1420 | 27.74 | 1025 | 27.66 | 955 | 27.16 | 570 | 31.91 | 7835 | 29.70 | 3380 | 29.91 | 3710 | 28.41 | 1690 | 26.33 | 186 | 26.08 | 136 | 26.41 | 222 |
| 21 | 28.33 | 1605 | 28.16 | 1420 | 27.74 | 1025 | 27.66 | 955 | 27.16 | 570 | 31.99 | 8025 | 29.53 | 3130 | 29.91 | 3710 | 28.41 | 1690 | 26.33 | 186 | 26.08 | 136 | 26.58 | 252 |
| 22 | 28.33 | 1605 | 28.16 | 1420 | 27.83 | 1105 | 27.58 | 880 | 27.08 | 515 | 32.66 | 9765 | 30.36 | 4520 | 29.91 | 3710 | 28.16 | 1420 | 26.33 | 186 | 25.91 | 102 | 26.75 | 335 |
| 23 | 28.33 | 1605 | 28.16 | 1420 | 27.83 | 1105 | 27.58 | 880 | 27.08 | 515 | 32.66 | 9765 | 29.28 | 2780 | 29.83 | 3580 | 28.08 | 1240 | 26.25 | 170 | 26.00 | 120 | 26.08 | 136 |
| 24 | 28.24 | 1500 | 28.16 | 1420 | 27.83 | 1105 | 27.49 | 805 | 27.08 | 515 | 34.49 | 14525 | 29.28 | 2780 | 29.83 | 3580 | 28.00 | 1260 | 26.25 | 170 | 26.00 | 120 | 27.08 | 516 |
| 25 | 28.24 | 1500 | 28.16 | 1420 | 27.83 | 1105 | 27.49 | 805 | 27.08 | 515 | 34.74 | 15175 | 29.28 | 2780 | 29.75 | 3450 | 28.00 | 1260 | 26.25 | 170 | 26.00 | 120 | 27.25 | 635 |
| 26 | 28.24 | 1500 | 28.08 | 1340 | 27.83 | 1105 | 27.49 | 805 | 27.16 | 570 | 34.73 | 15150 | 29.28 | 2780 | 29.66 | 3320 | 27.91 | 1180 | 26.25 | 170 | 26.00 | 120 | 27.25 | 635 |
| 27 | 28.33 | 1605 | 28.08 | 1340 | 27.83 | 1105 | 27.49 | 805 | 27.24 | 630 | 34.36 | 14185 | 29.20 | 2670 | 29.66 | 3320 | 27.83 | 1110 | 26.25 | 170 | 26.00 | 120 | 27.33 | 690 |
| 28 | 28.49 | 1780 | 28.08 | 1340 | 27.83 | 1105 | 27.49 | 805 | 27.41 | 745 | 34.16 | 13665 | 29.03 | 2430 | 29.50 | 3090 | 27.75 | 1030 | 26.25 | 170 | 26.08 | 136 | 27.66 | 955 |
| 29 | 28.74 | 2080 | 28.08 | 1340 | 27.74 | 1025 | 27.49 | 805 | 27.41 | 745 | 33.49 | 11925 | 28.95 | 2330 | 29.33 | 2850 | 27.91 | 1180 | 26.25 | 170 | 26.16 | 152 | 27.66 | 955 |
| 30 | 28.83 | 2185 | 28.08 | 1340 | 27.74 | 1025 | ..... | ..... | 27.41 | 745 | 33.09 | 10885 | 28.86 | 2220 | 29.16 | 2610 | 27.75 | 1030 | 26.25 | 170 | 26.16 | 152 | 27.75 | 1030 |
| 31 | ..... | ..... | 27.99 | 1250 | 27.74 | 1025 | ..... | ..... | 27.74 | 1025 | ..... | ..... | 28.86 | 2220 | ..... | .... | 27.41 | 745 | 26.25 | 170 | ..... | ..... | 27.75 | 1030 |

## Monthly Discharge of Vermilion River near Whitefish for 1915-6

Drainage Area, 1,580 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum. | Mean. | Depth in Inches on Drainage Area |
| November (1915) | 2,185 | 1,340 | 1,585 | 1.38 | .85 | 1.00 | 1.12 |
| December " | 3,580 | 1,250 | 1,821 | 2.27 | .79 | 1.15 | 1.33 |
| January (1916) | 1,250 | 1,025 | 1,073 | .79 | .65 | .68 | .78 |
| February | 1,025 | 805 | 943 | .65 | .51 | .60 | .65 |
| March | 1,025 | 515 | 696 | .65 | .33 | .44 | .51 |
| April | 15,175 | 1,105 | 9,024 | 9.60 | .70 | 5.71 | 6.37 |
| May | 13,120 | 2,220 | 5,442 | 8.30 | 1.41 | 3.44 | 3.97 |
| June | 3,710 | 1,460 | 2,915 | 2.35 | .92 | 1.84 | 2.05 |
| July | 2,500 | 745 | 1,836 | 1.58 | .47 | 1.16 | 1.34 |
| August | 635 | 170 | 241 | .40 | .11 | .15 | .17 |
| September | 252 | 102 | 177 | .16 | .06 | .11 | .12 |
| October | 1,030 | 136 | 341 | .65 | .09 | .22 | .25 |
| The year | 15,175 | 102 | 2,168 | 9.60 | .06 | 1.37 | 18.65 |

## Wanapatei River at McVittie's

**Location**—Along the C. N. Ry, line, twenty miles south of the Town of Sudbury, and about two miles up stream from McVittie's power house, and 300 feet above Water Falls, southeast corner of the Township of Secord, District of Sudbury (Mining Division).

**Records Available**—Discharge measurements from September, 1916, to October, 1916. Daily gauge heights from October 1, 1916, to October 31, 1916.

**Drainage Area**—1,175 square miles.

**Gauge**—Vertical steel staff with enamelled face, graduated in feet and inches, fastened on a 2 x 4 scantling and secured to a large tree on right shore on the cross section line. The zero of the gauge (elev. 5.00 ft.) is referred to a bench mark (elev. 11.15 feet) on top of spike riven in stump, 6½ feet downstream from initial point, right shore.

**Channel**—Straight for about 400 feet above and 300 feet below the station. Banks are high, rocky, and wooded, and not liable to overflow. The bed of the stream is composed of clay, practically permanent; the current is slow.

**Discharge Measurements**—Made from boat with a small Price current meter.

**Control**—During log driving periods logs may jam at the head of the falls, which is 300 feet below station. The jam may cause a back water affect at the gauging station.

**Observer**—J. S. McVittie, McVittie's Siding.

## Discharge Measurements of Wanapitei River at McVittie's

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| Sept. 8.... | Murray, W. S.. | 142 | 2,195 | .35 | 102.08 | 770 | ..... |
| " 28.... | " .. | 142 | 2,190 | .32 | 101.83 | 704 | ..... |

## Wanapitei River near Wanapitei

Location—100 feet above the falls known as Timmins Chute, six miles above the Village of Wanapitei, Township of Dryden, Sudbury District.

Records Available—Monthly discharge measurements from June, 1914 to August, 1916. Daily gauge heights from August 15, 1915, to October 31, 1916.

Drainage Area—940 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and fastened on a 2 x 8 scantling to a large elm tree on left bank 150 feet above falls. Zero of gauge (elev. 24.00 feet) is referred to bench mark (elev. 30.00 feet) painted on top of prominent rock at brink of falls on right shore.

Channel—Straight for about 500 feet above and 100 feet below gauging station. Banks are high, rocky and wooded, and do not overflow. The bed of the stream is composed of clay and gravel, slightly shifting. The current is moderate.

Discharge Measurements—Made by boat with Price current meter. Affected by construction work August-September.

Winter Flow—River is covered with ice during the winter months, and measurements are made through ice to determine the winter discharge.

Observer—Wilfred Rioux, Wanapitei.

### Discharge Measurements of Wanapitei River near Wanapitei in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 23 .... | Murray, W. S.. | 108 | 642 | 1.03 | 25.81 | 667 | ..... |
| 1916 | | | | | | | |
| Jan. 13 .... | " .. | 111 | 562 | 1.25 | 25.75 | 702(a) | ..... |
| Feb. 3 .... | " .. | 104 | 532 | 1.39 | 25.66 | 738(a) | ..... |
| Apr. 26 .... | " .. | 143 | 2,207 | 1.68 | 28.75 | 3,764(b) | ..... |
| May 31 .... | " .. | 145 | 1,262 | 3.15 | 30.64 | 3,978 | ..... |
| Aug. 25 .... | " .. | 112 | 641 | 1.39 | 25.50 | 894(c) | ..... |

(a) Ice measurement.
(b) Measurement taken at C. P. R. bridge at Wanapitei.
(c) Control changed by construction of power plant three-quarter mile above section.

# Daily Gauge Height and Discharge of Wanapitei River near Wanapitei for 1915-6

Drainage Area, 940 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 25.79 | 700 | 26.12 | 835 | 25.79 | 700 | 25.75 | 665 | 25.62 | 675 | 25.42 | 555 | 31.08 | 4360 | 28.66 | 2280 | 28.60 | 2240 | 27.41 | 1470 | 25.31 | 520 | ..... | ..... |
| 2 | 25.79 | 700 | 26.08 | 815 | 25.79 | 700 | 25.66 | 650 | 25.66 | 650 | 25.50 | 585 | 31.41 | 4690 | 28.16 | 1930 | 28.71 | 2320 | 27.33 | 1420 | 25.31 | 520 | ..... | ..... |
| 3 | 25.75 | 685 | 26.00 | 785 | 25.83 | 715 | 25.66 | 650 | 25.66 | 650 | 25.62 | 635 | 31.56 | 4780 | 27.91 | 1770 | 28.91 | 2460 | 27.29 | 1390 | 25.25 | 498 | ..... | ..... |
| 4 | 25.79 | 700 | 26.00 | 785 | 25.79 | 700 | 25.70 | 665 | 25.81 | 710 | 25.66 | 650 | 31.58 | 4860 | 28.25 | 1990 | 28.93 | 2470 | 27.25 | 1370 | 25.33 | 525 | ..... | ..... |
| 5 | 25.79 | 700 | 25.95 | 765 | 26.00 | 785 | 25.75 | 685 | 25.79 | 700 | 25.79 | 700 | 31.66 | 4940 | 28.50 | 2170 | 28.93 | 2470 | 27.16 | 1320 | 25.35 | 535 | ..... | ..... |
| 6 | 25.79 | 700 | 25.95 | 765 | 25.91 | 750 | 25.75 | 685 | 25.75 | 685 | 25.79 | 700 | 31.66 | 4940 | 28.50 | 2170 | 28.93 | 2470 | 27.16 | 1320 | 25.33 | 525 | ..... | ..... |
| 7 | 25.79 | 700 | 25.95 | 765 | 25.83 | 715 | 25.75 | 685 | 25.75 | 685 | 25.83 | 715 | 31.66 | 4940 | 27.95 | 1790 | 28.25 | 1990 | 27.18 | 1330 | 25.31 | 520 | ..... | ..... |
| 8 | 25.79 | 700 | 25.95 | 765 | 25.83 | 715 | 25.70 | 665 | 25.75 | 685 | 25.83 | 715 | 31.62 | 4900 | 27.96 | 1800 | 27.83 | 1720 | 27.29 | 1390 | 25.27 | 505 | ..... | ..... |
| 9 | 25.83 | 715 | 25.75 | 685 | 25.83 | 715 | 25.75 | 685 | 25.79 | 700 | 25.83 | 715 | 31.54 | 4820 | 27.91 | 1770 | 27.81 | 1710 | 27.21 | 1350 | 25.27 | 505 | ..... | ..... |
| 10 | 25.83 | 715 | 25.58 | 615 | 25.79 | 700 | 25.75 | 685 | 25.79 | 700 | 25.91 | 750 | 31.41 | 4690 | 27.91 | 1770 | 27.75 | 1670 | 27.00 | 1220 | 25.16 | 466 | ..... | ..... |
| 11 | 25.79 | 700 | 25.45 | 565 | 25.83 | 715 | 25.71 | 670 | 25.75 | 685 | 26.04 | 800 | 31.41 | 4690 | 27.75 | 1670 | 27.75 | 1670 | 27.08 | 1270 | 25.16 | 466 | ..... | ..... |
| 12 | 25.79 | 700 | 25.54 | 600 | 25.83 | 715 | 25.66 | 650 | 25.75 | 685 | 26.12 | 835 | 31.29 | 4570 | 27.54 | 1540 | 27.66 | 1620 | 26.68 | 1080 | 25.16 | 466 | ..... | ..... |
| 13 | 25.87 | 735 | 25.70 | 665 | 25.75 | 685 | 25.66 | 650 | 25.71 | 670 | 26.21 | 870 | 31.12 | 4400 | 27.12 | 1290 | 27.64 | 1600 | 26.58 | 1030 | 25.16 | 466 | ..... | ..... |
| 14 | 25.83 | 715 | 25.75 | 685 | 25.75 | 685 | 25.66 | 650 | 25.71 | 670 | 26.25 | 885 | 31.62 | 4900 | 27.79 | 1690 | 27.58 | 1570 | 26.54 | 1010 | 25.12 | 452 | ..... | ..... |
| 15 | 25.79 | 700 | 25.83 | 715 | 25.75 | 685 | 25.66 | 650 | 25.66 | 650 | 26.41 | 955 | 31.00 | 4280 | 27.52 | 1530 | 27.58 | 1570 | 26.54 | 1010 | 25.12 | 452 | ..... | ..... |
| 16 | 25.79 | 700 | 25.79 | 700 | 25.83 | 715 | 25.64 | 640 | 25.66 | 650 | 26.41 | 955 | 31.00 | 4280 | 27.54 | 1540 | 27.58 | 1570 | 26.54 | 1010 | 25.08 | 438 | ..... | ..... |
| 17 | 25.79 | 700 | 25.79 | 700 | 25.83 | 715 | 25.66 | 650 | 25.71 | 670 | 26.41 | 955 | 30.96 | 4240 | 27.91 | 1770 | 27.58 | 1570 | 26.50 | 995 | 25.08 | 438 | ..... | ..... |
| 18 | 25.79 | 700 | 25.75 | 685 | 25.87 | 735 | 25.66 | 650 | 25.71 | 670 | 26.41 | 955 | 30.83 | 4110 | 28.00 | 1820 | 27.58 | 1570 | 26.45 | 970 | 25.08 | 438 | ..... | ..... |
| 19 | 25.83 | 715 | 25.75 | 685 | 25.91 | 750 | 25.73 | 675 | 25.66 | 650 | 26.25 | 885 | 30.83 | 4110 | 28.08 | 1880 | 27.58 | 1570 | 26.41 | 955 | 25.08 | 438 | ..... | ..... |
| 20 | 25.83 | 715 | 25.75 | 685 | 25.91 | 750 | 25.70 | 665 | 25.66 | 650 | 26.20 | 865 | 31.66 | 4940 | 28.03 | 1880 | 27.58 | 1570 | 26.39 | 945 | 25.04 | 424 | ..... | ..... |
| 21 | 25.83 | 715 | 25.75 | 685 | 25.91 | 750 | 25.66 | 650 | 25.66 | 650 | 26.41 | 955 | 31.54 | 4820 | 27.98 | 1810 | 27.75 | 1670 | 26.37 | 935 | 25.08 | 438 | ..... | ..... |
| 22 | 25.81 | 710 | 25.79 | 700 | 25.96 | 770 | 25.58 | 615 | 25.66 | 650 | 26.66 | 1060 | 31.39 | 4670 | 27.85 | 1730 | 28.16 | 1930 | 26.35 | 925 | 25.08 | 438 | ..... | ..... |
| 23 | 25.81 | 710 | 25.79 | 700 | 25.79 | 700 | 25.58 | 615 | 25.66 | 625 | 26.83 | 1140 | 31.27 | 4550 | 28.81 | 2390 | 27.83 | 1720 | 25.00 | 410 | 25.08 | 438 | ..... | ..... |
| 24 | 25.83 | 715 | 25.83 | 715 | 25.79 | 700 | 25.58 | 615 | 25.58 | 615 | 27.00 | 1220 | 31.23 | 4510 | 28.77 | 2360 | 27.79 | 1690 | 24.91 | 383 | 25.18 | 473 | ..... | ..... |
| 25 | 25.83 | 715 | 25.83 | 715 | 25.75 | 685 | 25.50 | 585 | 25.58 | 615 | 28.59 | 2170 | 31.16 | 4440 | 29.16 | 2650 | 27.73 | 1660 | 25.50 | 585 | 25.33 | 525 | ..... | ..... |
| 26 | 25.83 | 715 | 25.83 | 715 | 25.66 | 650 | 25.33 | 525 | 25.58 | 615 | 28.75 | 2340 | 31.12 | 4400 | 28.98 | 2510 | 27.66 | 1620 | 25.46 | 570 | 25.23 | 490 | ..... | ..... |
| 27 | 26.16 | 850 | 25.79 | 700 | 25.58 | 615 | 25.50 | 585 | 25.58 | 615 | 29.66 | 3050 | 31.66 | 4940 | 28.83 | 2400 | 27.58 | 1570 | 25.41 | 555 | 25.25 | 498 | ..... | ..... |
| 28 | 26.25 | 885 | 25.79 | 700 | 25.62 | 635 | 25.50 | 585 | 25.54 | 600 | 30.29 | 3620 | 31.58 | 4860 | 28.66 | 2280 | 27.58 | 1570 | 25.41 | 555 | 25.21 | 484 | ..... | ..... |
| 29 | 26.25 | 885 | 25.83 | 715 | 25.73 | 675 | 25.58 | 615 | 25.50 | 585 | 30.70 | 3990 | 31.47 | 4750 | 28.60 | 2240 | 27.54 | 1540 | 25.37 | 540 | 25.21 | 484 | ..... | ..... |
| 30 | 26.22 | 875 | 25.83 | 715 | 25.75 | 685 | ..... | ..... | 25.42 | 555 | 30.83 | 4110 | 31.33 | 4610 | 28.60 | 2240 | 27.50 | 1520 | 25.53 | 525 | 25.21 | 484 | ..... | ..... |
| 31 | ..... | ..... | 25.79 | 700 | 25.75 | 685 | ..... | ..... | 25.41 | 555 | ..... | ..... | 30.58 | 3880 | ..... | .... | 27.50 | 1520 | 25.31 | 520 | ..... | ..... | ..... | ..... |

## Monthly Discharge of Wanapitei River near Wanapitei for 1915-6

Drainage Area, 940 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1415) | 885 | 685 | 729 | .94 | .73 | .78 | .87 |
| December " | 835 | 565 | 710 | .89 | .60 | .76 | .88 |
| January ..(1916) | 785 | 615 | 706 | .84 | .65 | .75 | .86 |
| February ..... | 685 | 525 | 643 | .73 | .56 | .68 | .73 |
| March..... | 710 | 555 | 649 | .76 | .59 | .69 | .80 |
| April..... | 4,110 | 555 | 1,311 | 4.37 | .59 | 1.39 | 1.55 |
| May..... | 4,940 | 3,880 | 4,609 | 5.26 | 4.13 | 4.90 | 5.64 |
| June ..... | 2,650 | 1,290 | 1,985 | 2.82 | 1.37 | 2.08 | 2.32 |
| July..... | 2,470 | 1,520 | 1,787 | 2.63 | 1.62 | 1.90 | 2.19 |
| August..... | 1,470 | 383 | 979 | 1.56 | .41 | 1.04 | 1.20 |
| September..... | 535 | 424 | 478 | .57 | .45 | .51 | .57 |
| October..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| The year..... | 4,940 | 383 | 1,330 | 5.26 | .41 | 1.41 | 17.58 |

## Regular Stations

### NORTH-WESTERN ONTARIO DISTRICT

| River | Location | Drainage Area Sq. Miles | Township | District |
|---|---|---|---|---|
| Eagle | at Eagle River | 970 | | Kenora |
| English | at Caribou Falls | 21,600 | | " |
| " | at Ear Falls | 11,700 | | " |
| " | at Manitou Falls | 14,600 | | " |
| " | near Oak Falls | 15,570 | | " |
| " | at Sturgeon Falls | | | " |
| Footprint | at Rainy Lake Falls | 590 | | Rainy River |
| Manitou | at Devil's Cascades | 435 | | " |
| Seine | at Skunk Rapids | 2,300 | | " |
| Turtle | at Mountain Rapids | 1,760 | | " |
| Wabigoon | near Quibell | 2,400 | | " |
| " | at Wabigoon Falls | 3,120 | | Kenora |

## Eagle River at Eagle River

Location—At the highway bridge 1,000 feet south of the C.P. Ry. crossing of the river, and above the "Cascades," in the Township of Aubrey, District of Kenora. This river is a branch of the Wabigoon River.

Records Available—Discharge measurements from January, 1914, to October, 1916. Daily gauge heights February 12, 1914, to October 31, 1916.

Drainage Area—970 square miles.

Gauge—Vertical staff with enamelled face screwed to a 2 x 4 inch scantling, which is nailed to the south side of the bridge crib near the south-east corner, and next to the left bank of the river. The zero on the gauge (elev. 1,172.99) is referred to a bench mark (elev. 1,176.56, C.P.R. datum) painted on a point of rock on the left bank a few feet south-west of gauge.

Channel and Control—Straight for about 100 feet above the station, with the water flowing slowly. Below the section the channel is straight for about 20 feet, with the water running swiftly to the Cascades. The banks are clean, high, rocky and not liable to overflow. The bed consists of rock, and is permanent. At extreme highwater the flow is cut up by the bridge piers, but under normal conditions the flow is all through one channel.

Discharge Measurements—Made from the highway bridge with a small Price current meter.

Winter Flow—Not affected by ice. The water at the section never freezes.

Accuracy—The station rating curve is well defined. Fluctuation in gauge heights is occasionally augmented by wind on Eagle Lake. This is in every way an exceptionally good station.

Observer—J. Nelson, Eagle River.

### Discharge Measurements of Eagle River at Eagle River in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| June 13.... | Taylor, J, R.... | 95 | 391 | 5.84 | 1177.66 | 2,283 | ..... |
| " 17.... | " .... | 95 | 351 | 5.13 | 1177.24 | 1,801 | ..... |
| " 17.... | " .... | 95 | 351 | 4.95 | 1177.24 | 1,737 | ..... |
| July 5.... | " .... | 95 | 320 | 4.88 | 1176.91 | 1,564 | ..... |
| " 5.... | " .... | 95 | 320 | 4.90 | 1176.91 | 1,570 | ..... |

# Daily Gauge Height and Discharge of Eagle River at Eagle River for 1915-6

Drainage Area 970 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1173.93 | 270 | 1174.09 | 310 | 1174.16 | 329 | 1174.32 | 376 | 1174.26 | 358 | 1174.16 | 329 | 1175.74 | 970 | 1177.74 | 2110 | 1176.74 | 1510 | 1176.11 | 1155 | 1175.32 | 780 | 1175.37 | 800 |
| 2 | 1173.91 | 265 | 1174.09 | 310 | 1174.14 | 324 | 1174.37 | 392 | 1174.24 | 352 | 1174.16 | 329 | 1175.82 | 1010 | 1177.78 | 2140 | 1176.74 | 1510 | 1176.11 | 1155 | 1175.28 | 760 | 1175.39 | 810 |
| 3 | 1173.89 | 261 | 1174.11 | 316 | 1174.16 | 329 | 1174.39 | 399 | 1174.24 | 352 | 1174.16 | 329 | 1175.95 | 1070 | 1177.82 | 2160 | 1176.74 | 1510 | 1 176.16 | 1180 | 1175.32 | 780 | 1175.39 | 810 |
| 4 | 1173.86 | 254 | 1174.11 | 316 | 1174.16 | 329 | 1174.39 | 399 | 1174.22 | 346 | 1174.16 | 329 | 1176.03 | 1115 | 1177.87 | 2190 | 1176.70 | 1490 | 1176.16 | 1180 | 1175.37 | 800 | 1175.37 | 800 |
| 5 | 1173.82 | 245 | 1174.14 | 324 | 1174.18 | 335 | 1174.39 | 399 | 1174.22 | 346 | 1174.14 | 324 | 1176.11 | 1155 | 1177.91 | 2220 | 1176.66 | 1470 | 1176.07 | 1135 | 1175.37 | 800 | 1175.37 | 800 |
| 6 | 1173.82 | 245 | 1174.14 | 324 | 1174.20 | 340 | 1174.39 | 399 | 1174.22 | 346 | 1174.14 | 324 | 1176.24 | 1220 | 1177.99 | 2260 | 1176.61 | 1440 | 1176.11 | 1155 | 1175.45 | 835 | 1175.32 | 780 |
| 7 | 1173.89 | 261 | 1174.11 | 316 | 1174.22 | 346 | 1174.37 | 392 | 1174.22 | 346 | 1174.14 | 324 | 1176.32 | 1265 | 1177.95 | 2240 | 1176.57 | 1410 | 1176.11 | 1155 | 1175.49 | 855 | 1175.32 | 780 |
| 8 | 1173.93 | 270 | 1174.09 | 310 | 1174.22 | 346 | 1174.37 | 392 | 1174.22 | 346 | 1174.14 | 324 | 1176.41 | 1320 | 1177.95 | 2240 | 1176.53 | 1390 | 1176.07 | 1135 | 1175.53 | 875 | 1175.32 | 780 |
| 9 | 1173.99 | 285 | 1174 09 | 310 | 1174.24 | 352 | 1174.34 | 383 | 1174.22 | 346 | 1174.11 | 316 | 1176.49 | 1360 | 1177.91 | 2220 | 1176.45 | 1340 | 1176.11 | 1155 | 1175.49 | 855 | 1175.32 | 780 |
| 10 | 1174.05 | 300 | 1174.07 | 305 | 1174.26 | 358 | 1174.34 | 383 | 1174.24 | 352 | 1174.11 | 316 | 1176.49 | 1360 | 1177.91 | 2220 | 1176.45 | 1340 | 1176.16 | 1180 | 1175.49 | 855 | 1175.32 | 780 |
| 11 | 1174.05 | 300 | 1174.07 | 305 | 1174.28 | 364 | 1174.34 | 383 | 1174.24 | 352 | 1174.11 | 316 | 1176.49 | 1360 | 1177.87 | 2190 | 1176.41 | 1320 | 1176.11 | 1155 | 1175.53 | 875 | 1175.28 | 760 |
| 12 | 1174.03 | 295 | 1174.14 | 324 | 1174.30 | 370 | 1174.37 | 392 | 1174.24 | 352 | 1174.11 | 316 | 1176.57 | 1410 | 1177.82 | 2160 | 1176.32 | 1265 | 1175.99 | 1095 | 1175.49 | 855 | 1175.26 | 750 |
| 13 | 1174 03 | 295 | 1174.14 | 324 | 1174.30 | 370 | 1174.37 | 392 | 1174.24 | 352 | 1174.14 | 324 | 1176.66 | 1470 | 1177.74 | 2110 | 1176.24 | 1220 | 1175.99 | 1095 | 1175.45 | 835 | 1175.26 | 750 |
| 14 | 1174 03 | 295 | 1174.14 | 324 | 1174.30 | 370 | 1174.34 | 383 | 1174.24 | 352 | 1174.14 | 324 | 1176.74 | 1510 | 1177.66 | 2070 | 1176.20 | 1200 | 1175.91 | 1055 | 1175.41 | 820 | 1175.16 | 705 |
| 15 | 1174.03 | 295 | 1174.16 | 329 | 1174.32 | 376 | 1174.37 | 392 | 1174.22 | 346 | 1174.14 | 324 | 1176.78 | 1540 | 1177.57 | 2010 | 1176.16 | 1180 | 1175.91 | 1055 | 1175.41 | 820 | 1175.16 | 705 |
| 16 | 1174.07 | 305 | 1174.16 | 329 | 1174.32 | 376 | 1174.34 | 383 | 1174.22 | 346 | 1174.20 | 340 | 1176.91 | 1620 | 1177.49 | 1960 | 1176.07 | 1135 | 1176.87 | 1035 | 1175.41 | 820 | 1175.16 | 705 |
| 17 | 1174.07 | 305 | 1174.16 | 329 | 1174.32 | 376 | 1174.37 | 392 | 1174.22 | 346 | 1174.28 | 364 | 1176.99 | 1660 | 1177.41 | 1920 | 1175.99 | 1095 | 1175.82 | 1010 | 1175.41 | 820 | 1175.16 | 705 |
| 18 | 1174.02 | 292 | 1174.14 | 324 | 1174.30 | 370 | 1174.37 | 392 | 1174.22 | 346 | 1174.47 | 326 | 1177.07 | 1710 | 1177.32 | 1860 | 1176.07 | 1135 | 1175.78 | 990 | 1175.37 | 800 | 1175.16 | 705 |
| 19 | 1174.02 | 292 | 1174.16 | 329 | 1174.30 | 370 | 1174.34 | 383 | 1174.22 | 346 | 1174.57 | 363 | 1177.16 | 1770 | 1177.24 | 1810 | 1176.16 | 1180 | 1175.66 | 930 | 1175.32 | 780 | 1175.14 | 700 |
| 20 | 1174.03 | 294 | 1174.14 | 324 | 1174.30 | 370 | 1174.34 | 383 | 1174.20 | 340 | 1174.66 | 499 | 1177.24 | 1810 | 1177.16 | 1770 | 1176.24 | 1220 | 1175.61 | 910 | 1175.37 | 800 | 1175.14 | 700 |
| 21 | 1174.11 | 316 | 1174.14 | 324 | 1174.30 | 370 | 1174.32 | 376 | 1174.20 | 340 | 1174.74 | 530 | 1177.32 | 1860 | 1177.07 | 1710 | 1176.24 | 1220 | 1175.57 | 890 | 1175.37 | 800 | 1175.14 | 700 |
| 22 | 1174.14 | 324 | 1174.11 | 316 | 1174.30 | 370 | 1174.30 | 370 | 1174.20 | 340 | 1174.87 | 585 | 1177.37 | 1890 | 1176.99 | 1660 | 1176.28 | 1245 | 1175.49 | 855 | 1175.37 | 800 | 1175.11 | 685 |
| 23 | 1174.14 | 324 | 1174.11 | 316 | 1174.28 | 364 | 1174.30 | 370 | 1174.20 | 340 | 1174.91 | 600 | 1177.41 | 1920 | 1176.91 | 1620 | 1176.28 | 1245 | 1175.45 | 835 | 1175.37 | 800 | 1175.11 | 685 |
| 24 | 1174.11 | 316 | 1174.11 | 316 | 1174.26 | 358 | 1174.30 | 370 | 1174.18 | 335 | 1175.07 | 665 | 1177.49 | 1960 | 1176.82 | 1560 | 1176.24 | 1220 | 1175.41 | 820 | 1175.32 | 780 | 1175.11 | 685 |
| 25 | 1174.09 | 310 | 1174.09 | 310 | 1174.26 | 358 | 1174.30 | 370 | 1174.18 | 335 | 1175.16 | 705 | 1177.49 | 1960 | 1176.87 | 1590 | 1176.16 | 1180 | 1175.32 | 780 | 1175.37 | 800 | 1175.09 | 675 |
| 26 | 1174.09 | 310 | 1174.14 | 324 | 1174.28 | 364 | 1174.28 | 364 | 1174.18 | 335 | 1175.28 | 760 | 1177.53 | 1990 | 1176.87 | 1590 | 1176.11 | 1155 | 1175.32 | 780 | 1175.39 | 810 | 1175.11 | 685 |
| 27 | 1174 11 | 316 | 1174.16 | 329 | 1174.24 | 352 | 1174.28 | 364 | 1174.18 | 335 | 1175.37 | 800 | 1177.57 | 2010 | 1176.91 | 1620 | 1176.11 | 1155 | 1175.32 | 780 | 1175.39 | 810 | 1175.09 | 675 |
| 28 | 1174.11 | 316 | 1174.16 | 329 | 1174.24 | 352 | 1174.26 | 358 | 1174.16 | 329 | 1175.49 | 855 | 1177.57 | 2010 | 1176.87 | 1590 | 1176.07 | 1135 | 1175.32 | 780 | 1175.39 | 810 | 1175.09 | 675 |
| 29 | 1174.11 | 316 | 1174.16 | 329 | 1174.24 | 352 | 1174.26 | 358 | 1174.16 | 329 | 1175.57 | 890 | 1177.61 | 2040 | 1176.87 | 1590 | 1175.99 | 1095 | 1175.28 | 760 | 1175.39 | 810 | 1175.09 | 675 |
| 30 | 1174.11 | 316 | 1174.16 | 329 | 1174.28 | 364 | ..... | .... | 1174.14 | 324 | 1175.66 | 930 | 1177.66 | 2070 | 1176.82 | 1560 | 1176.07 | 1135 | 1175.32 | 780 | 1175.37 | 800 | 1175.07 | 665 |
| 31 | ..... | .... | 1174.16 | 329 | 1174.30 | 370 | ..... | .... | 1174.14 | 324 | ..... | .... | 1177.68 | 2080 | .... .. | .... | 1176.07 | .... | 1175.32 | 780 | ..... | .... | 1175.09 | 675 |

## Monthly Discharge of Eagle River at Eagle River for 1915-6

Drainage Area, 970 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 324 | 245 | 293 | .33 | .25 | .30 | .33 |
| December " | 329 | 305 | 320 | .34 | .31 | .33 | .38 |
| January .. (1916) | 376 | 324 | 357 | .39 | .33 | .37 | .43 |
| February ..... | 399 | 358 | 382 | .41 | .37 | .39 | .42 |
| March ..... | 358 | 324 | 343 | .37 | .33 | .35 | .40 |
| April ..... | 930 | 316 | 469 | .96 | .33 | .48 | .54 |
| May ..... | 2,080 | 970 | 1,597 | 2.14 | 1.00 | 1.65 | 1.90 |
| June..... | 2,260 | 1,560 | 1,932 | 2.33 | 1.61 | 1.99 | 2.22 |
| July ..... | 1,510 | 1,095 | 1,267 | 1.56 | 1.13 | 1.31 | 1.51 |
| August ..... | 1,180 | 760 | 992 | 1.22 | .78 | 1.02 | 1.18 |
| September ..... | 875 | 760 | 815 | .90 | .78 | .84 | .94 |
| October..... | 810 | 665 | 729 | .84 | .69 | .75 | .86 |
| The year ..... | 2,260 | 245 | 793 | 2.33 | .25 | .82 | 11.16 |

## English River at Caribou Falls

**Location**—About 1,200 feet above Caribou Falls, the last falls on the river, and about five miles from the Winnipeg River, District of Kenora.

**Records Available**—Discharge measurements from May, 1914, to October, 1916.

**Drainage Area**—21,600 square miles.

**Gauge**—Vertical staff located on the left bank of the river 25.6 feet north of a blazed jack pine, which is used as the initial point for soundings. The zero on the gauge (elevation 100.00) is referred to a bench mark (elevation 109.45) painted on a point of rock 16 feet south of the blazed jack pine.

**Channel and Control**—Above the station the channel takes a 90 degree curve to the right, thence following comparatively straight to the head of the falls. Both banks are high, rocky and wooded, and not liable to overflow. The bed of the stream is rocky, with large boulders or protruding shelves of rock and practically permanent. The water at the left bank is still, backflow existing at higher stages. The natural control is wide and unobstructed.

**Discharge Measurements**—Made from a canoe, and occasionally through ice, with a small Price current meter or from raft in winter.

**Winter Flow**—Ice conditions make little or no difference, the channel being rarely frozen over.

**Accuracy**—A well defined curve has been secured here.

### Discharge Measurements of English River at Caribou Falls in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| June 26.... | Carmichael, R.M | 245 | 10,819 | 2.39 | 105.04 | 25,845 | ..... |

## English River at Ear Falls

Location—At the foot of Lac Seul, about three miles below Pine Ridge Hudson's Bay Co's. Post, and about ¼ mile above upper Ear Falls, District of Kenora.

Records Available—Discharge measurements from July, 1914, to October, 1916. Bi-weekly gauge heights, February 1st, 1915, to October 31st, 1916.

Drainage Area—11,700 square miles.

Gauge—Vertical staff with enamelled face screwed to a 6-inch hewn spruce post which is firmly wedged in the rock of the left bank 200 feet below a 2-inch poplar, which is painted white and used as the initial point for soundings. The zero on the gauge (elev. 115.12) is referred to a bench mark (elev. 122.75) painted on a point of rock 5 feet above the gauge.

Channel and Control—Straight for about 300 feet above and below the station, then turning to the left widens out to the top of the falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream at the section is apparently permanent; the current sluggish, and flowing through one channel at all stages. The natural control is wide, shallow and unobstructed.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—Ice conditions make little difference, the channel rarely freezing over.

Accuracy—Backwater at the left bank causes a little difficulty in making accurate discharge measurements.

Observer—Chas. McIvor, care of Hudson Bay Co's. Lac Seul Post, Sioux Lookout P.O.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to gauges at Manitou and Oak Falls. Gauge readings taken on nearly the same day were used in making up curves for the three stations, and the results obtained justify the assumptions made. No allowance is made for lag. With additional data it may be possible to extend the system to points farther down the river.

### Discharge Measurements of English River at Ear Falls in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| July 28.... | Taylor, J, R..... | 359 | 9,753 | 2.04 | 122.70 | 19,862 | ..... |
| " 28.... | " .... | 359 | 9,753 | 2.04 | 122.70 | 19,872 | ..... |

# Daily Gauge Height and Discharge of English River at Ear Falls for 1915-6

Drainage Area, 11,700 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | ..... | ..... | ..... | .... | ..... | ..... | 119.37 | 6800 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 122.62 | 19480 | 121.22 | 12980 | ..... | ..... |
| 2 | 119.41 | 6920 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119.29 | 6570 | 121.41 | 14740 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 | ..... | ..... | 119.87 | 8630 | ..... | ..... | ..... | ..... | 119.04 | 5910 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 4 | ..... | ..... | ..... | .... | 119.62 | 7680 | 119.37 | 6800 | ..... | ..... | 118.70 | 5160 | ..... | ..... | ..... | ..... | 122.62 | 19480 | 122.56 | 19000 | ..... | ..... | ..... | ..... |
| 5 | 119.45 | 7050 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119.45 | 7040 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 | ..... | ..... | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 121.62 | 15580 | ..... | ..... | ..... | ..... | 121.20 | 13900 | ..... | ..... |
| 7 | ..... | ..... | 119.95 | 9000 | 119.62 | 7680 | ..... | ..... | 119.00 | 5810 | 118.70 | 5160 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 8 | ..... | ..... | ..... | .... | ..... | ..... | 119.33 | 6690 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 122.62 | 19480 | 122.35 | 18500 | ..... | ..... | ..... | ..... |
| 9 | 119.37 | 6810 | 119.87 | 8630 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119.62 | 7680 | 121.87 | 16580 | ..... | ..... | ..... | ..... | 120.97 | 12980 | ..... | ..... |
| 10 | ..... | ..... | ..... | .... | ..... | ..... | ..... | ..... | 118.95 | 5700 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 11 | ..... | ..... | ..... | .... | 119.62 | 7630 | 119.33 | 6690 | ..... | ..... | 118.74 | 5240 | ..... | ..... | ..... | ..... | 122.70 | 19800 | 122.22 | 17980 | ..... | ..... | ..... | ..... |
| 12 | ..... | ..... | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119.79 | 8360 | ..... | ..... | ..... | ..... | ..... | ..... | 121.02 | 13180 | ..... | ..... |
| 13 | ..... | ..... | ..... | .... | ..... | ..... | ..... | ..... | 118.87 | 5510 | ..... | ..... | ..... | ..... | 122.08 | 17420 | ..... | ..... | ..... | ..... | ..... | ..... | 120.16 | 9840 |
| 14 | ..... | ..... | 119.79 | 8360 | 119.60 | 7600 | ..... | ..... | ..... | ..... | 118.79 | 5340 | ..... | ..... | ..... | ..... | 122.74 | 19960 | ..... | ..... | ..... | ..... | ..... | ..... |
| 15 | ..... | ..... | ..... | .... | ..... | ..... | 119.29 | 6570 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 121.97 | 16980 | 120.95 | 12900 | ..... | ..... |
| 16 | 119.29 | 6570 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119.95 | 9000 | 122.20 | 17900 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 17 | ..... | ..... | 119.74 | 8160 | ..... | ..... | ..... | ..... | 118.83 | 5430 | ..... | ..... | ..... | ..... | 122.24 | 18060 | ..... | ..... | ..... | ..... | ..... | ..... | 120.12 | 9680 |
| 18 | ..... | ..... | ..... | .... | 119.58 | 7520 | 119.24 | 6430 | ..... | ..... | 118.79 | 5340 | ..... | ..... | ..... | ..... | 122.93 | 20720 | 121.95 | 16900 | 120.83 | 12420 | ..... | ..... |
| 19 | 119.33 | 6690 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 120.24 | 10160 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 20 | ..... | ..... | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 122.37 | 18580 | ..... | ..... | ..... | ..... | ..... | ..... | 120.04 | 9360 |
| 21 | ..... | ..... | 119.70 | 8000 | 119.56 | 7440 | ..... | ..... | 118.79 | 5340 | 118.83 | 5430 | ..... | ..... | ..... | ..... | 122.72 | 19880 | ..... | ..... | ..... | ..... | ..... | ..... |
| 22 | ..... | ..... | ..... | .... | ..... | ..... | 119.22 | 6380 | ..... | ..... | ..... | ..... | ..... | ..... | 122.45 | 18850 | ..... | ..... | 121.87 | 16580 | ..... | ..... | ..... | ..... |
| 23 | 119.20 | 6320 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 120.62 | 11680 | 122.54 | 19160 | ..... | ..... | ..... | ..... | 120.77 | 12210 | ..... | ..... |
| 24 | ..... | ..... | 119.66 | 7840 | ..... | ..... | ..... | ..... | 118.79 | 5340 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 119.95 | 9000 |
| 25 | ..... | ..... | ..... | .... | 119.45 | 7040 | 119.20 | 6320 | ..... | ..... | 118.91 | 5600 | ..... | ..... | ..... | ..... | 122.72 | 19880 | 121.72 | 15980 | ..... | ..... | 119.87 | 8680 |
| 26 | 119.95 | 9000 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 120.87 | 12580 | ..... | ..... | ..... | ..... | ..... | ..... | 120.62 | 11680 | ..... | ..... |
| 27 | ..... | ..... | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 122.62 | 19480 | ..... | ..... | ..... | ..... | ..... | ..... | 119.87 | 8680 |
| 28 | ..... | ..... | 119.62 | 7630 | 119.41 | 6920 | ..... | ..... | 118.79 | 5340 | 118.95 | 5700 | ..... | ..... | 122.66 | 19640 | 122.70 | 19800 | ..... | ..... | ..... | ..... | 119.83 | 8520 |
| 29 | ..... | ..... | ..... | .... | ..... | ..... | 119.12 | 6110 | ..... | ..... | ..... | ..... | ..... | ..... | 122.70 | 19800 | ..... | ..... | 121.50 | 15100 | 120.56 | 11440 | ..... | ..... |
| 30 | 119.87 | 8680 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 121.04 | 13260 | 122.74 | 19960 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 31 | ..... | ..... | 119.62 | 7680 | ..... | ..... | ..... | ..... | 118.74 | 5240 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

## Monthly Discharge of English River at Ear Falls for 1915-6

Drainage Area, 11,700 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November..(1915) | 9,000 | 6,320 | 7,255 | .77 | .54 | .62 | .69 |
| December " | 9,000 | 7,680 | 8,231 | .77 | .66 | .70 | .81 |
| January ...1916) | 7,680 | 6,920 | 7,445 | .66 | .59 | .64 | .74 |
| February ..... | 6,800 | 6,110 | 6,532 | .58 | .52 | .56 | .60 |
| March ..... | 5,910 | 5,240 | 5,513 | .51 | .45 | .47 | .54 |
| April ..... | 5,700 | 5,160 | 5,371 | .49 | .44 | .46 | .51 |
| May..... | 13,260 | 6,570 | 9,592 | 1.13 | .56 | .82 | .95 |
| June..... | 19,960 | 14,740 | 18,135 | 1.71 | 1.26 | 1.55 | 1.73 |
| July ..... | 20,720 | 19,480 | 19,875 | 1.77 | 1.66 | 1.70 | 1.96 |
| August..... | 19,480 | 15,100 | 17,389 | 1.66 | 1.29 | 1.49 | 1.72 |
| September..... | 13,980 | 11,440 | 12,743 | 1.19 | .98 | 1.09 | 1.22 |
| October..... | 9,840 | 8,520 | 9,109 | .84 | .73 | .78 | .90 |
| The year ..... | 20,720 | 5,240 | 10,935 | 1.77 | .45 | .93 | 12.66 |

## Daily Gauge Height of English River at Lac Seul for 1915-6

| Day. | Nov. | Dec. | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sept. | Oct. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 105.27 | 105.73 | 105.77 | 105.44 | 105.10 | 104.83 | 105.33 | 108.17 | 109.63 | 109.41 | 107.81 | 106.66 |
| 2 | 105.27 | 105.77 | 105.77 | 105.44 | 105.10 | 104.83 | 105.39 | 108.25 | 109.63 | 109.36 | 107.73 | 106.77 |
| 3 | 105.27 | 105.77 | 105.77 | 105.44 | 105.02 | 104.77 | 105.45 | 108.31 | 109.63 | 109.26 | 107.69 | 106.56 |
| 4 | 105.23 | 105.77 | 105.77 | 105.44 | 105.02 | 104.77 | 105.48 | 108.46 | 109.63 | 109.21 | 107.65 | 106.58 |
| 5 | 105.27 | 105.77 | 105.73 | 105.44 | 105.02 | 104.75 | 105.56 | 108.50 | 109.65 | 109.19 | 107.61 | 106.61 |
| 6 | 105.31 | 105.77 | 105.73 | 105.35 | 105.02 | 104.75 | 105.62 | 108.58 | 109.61 | 109.11 | 107.56 | 106.49 |
| 7 | 105.35 | 105.81 | 105.73 | 105.35 | 105.02 | 104.73 | 105.64 | 108.71 | 109.63 | 109.13 | 107.51 | 106.43 |
| 8 | 105.44 | 105.81 | 105.73 | 105.35 | 105.02 | 104.69 | 105.81 | 108.75 | 109.61 | 109.06 | 107.46 | 106.33 |
| 9 | 105.44 | 105.81 | 105.69 | 105.35 | 105.02 | 104.69 | 105.83 | 108.83 | 109.61 | 109.01 | 107.41 | 106.33 |
| 10 | 105.44 | 105.81 | 105.69 | 105.35 | 105.02 | 104.69 | 106.23 | 108.96 | 109.73 | 108.96 | 107.36 | 106.31 |
| 11 | 105.44 | 105.85 | 105.69 | 105.35 | 105.02 | 104.64 | 106.43 | 108.98 | 109.88 | 109.06 | 107.31 | 106.29 |
| 12 | 105.44 | 105.85 | 105.65 | 105.35 | 105.02 | 104.69 | 106.43 | 109.06 | 109.90 | 108.96 | 107.26 | 106.24 |
| 13 | 105.52 | 105.85 | 105.65 | 105.35 | 105.02 | 104.71 | 106.48 | 109.13 | 109.88 | 108.91 | 107.21 | 106.21 |
| 14 | 105.52 | 105.85 | 105.65 | 105.35 | 105.02 | 104.73 | 106.48 | 109.21 | 109.88 | 108.86 | 107.21 | 106.21 |
| 15 | 105.52 | 105.85 | 105.62 | 105.35 | 104.94 | 104.69 | 106.56 | 109.25 | 109.90 | 108.73 | 107.16 | 106.16 |
| 16 | 105.52 | 105.85 | 105.62 | 105.35 | 104.94 | 104.71 | 106.73 | 109.33 | 109.88 | 108.66 | 107.11 | 106.16 |
| 17 | 105.56 | 105.85 | 105.60 | 105.27 | 104.92 | 104.77 | 166.85 | 109.42 | 109.88 | 108.58 | 107.01 | 106.13 |
| 18 | 105.56 | 105.85 | 105.52 | 105.27 | 104.94 | 104.81 | 106.83 | 109.54 | 109.94 | 108.56 | 106.96 | 106.01 |
| 19 | 105.60 | 105.85 | 105.52 | 105.27 | 104.96 | 104.83 | 106.89 | 109.56 | 110.03 | 108.49 | 106.91 | 106.01 |
| 20 | 105.60 | 105.85 | 105.52 | 105.19 | 104.85 | 104.85 | 106.98 | 109.56 | 110.07 | 108.47 | 106.86 | 106.01 |
| 21 | 105.60 | 105.77 | 105.52 | 105.19 | 104.85 | 104.94 | 107.00 | 109.58 | 109.92 | 108.41 | 107.11 | 106.01 |
| 22 | 105.64 | 105.77 | 105.52 | 105.19 | 104.85 | 105.00 | 107.04 | 109.58 | 109.94 | 108.36 | 107.01 | 105.95 |
| 23 | 105.64 | 105.77 | 105.52 | 105.19 | 104.79 | 105.00 | 107.14 | 109.58 | 109.92 | 108.26 | 106.94 | 105.91 |
| 24 | 105.64 | 105.77 | 105.52 | 105.27 | 104.77 | 105.02 | 107.39 | 109.71 | 109.94 | 108.26 | 106.91 | 105.87 |
| 25 | 105.67 | 105.77 | 105.52 | 105.19 | 104.77 | 105.10 | 107.52 | 109.67 | 109.84 | 108.18 | 106.88 | 105.93 |
| 26 | 105.67 | 105.77 | 105.52 | 105.10 | 104.85 | 105.17 | 107.60 | 109.67 | 109.86 | 108.16 | 106.83 | 105.83 |
| 27 | 105.69 | 105.77 | 105.52 | 105.10 | 104.85 | 105.23 | 107.73 | 109.71 | 109.51 | 108.06 | 106.79 | 105.76 |
| 28 | 105.69 | 105.77 | 105.52 | 105.10 | 104.83 | 105.23 | 107.85 | 109.71 | 109.51 | 108.03 | 106.76 | 105.71 |
| 29 | 105.69 | 105.77 | 105.52 | 105.10 | 104.85 | 105.38 | 107.91 | 109.71 | 109.51 | 107.99 | 106.71 | 105.78 |
| 30 | 105.69 | 105.77 | 105.52 | ..... | 104.85 | 105.35 | 107.98 | 109.67 | 109.46 | 107.91 | 106.69 | 105.71 |
| 31 | ..... | ..... | 105.52 | ..... | 104.83 | ..... | 108.06 | ..... | 109.41 | 107.86 | ..... | 105.71 |

## English River at Manitou Falls

Location—About 800 feet above the first chute of the Manitou Falls, and five miles below the mouth of the Mattawa River and the old Mattawa H. B. Co's. Post. Cedar River enters the English River ½ mile below the metering section.

Records Available—Discharge measurements from July, 1914, to October, 1916. Bi-weekly gauge heights interpolated from Ear Falls gauge heights, February 1st, 1915, to October 31st, 1916.

Drainage Area—14,600 square miles.

Gauge—Vertical staff with enamelled face screwed to a 6-inch pine post and firmly wedged and wired to the right bank 15 feet south of a 2-inch jack pine, which is used as the initial point for soundings. The zero on the gauge (elev. 89.42) is referred to a bench mark (elev. 100.43) painted on a point of rock 2.5 feet south-east of the initial point.

Channel and Control—About 1,200 feet above the station the channel begins to narrow down and turns to the right out of the lake above. It is comparatively straight thence to the station and falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream is rocky and permanent. The current is slow above and moderately swift at the section.

Discharge Measurements—Made from a canoe with a small Price current meter.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to the gauge at Manitou Falls. Gauge readings taken on nearly the same day were used in making up curves for the two stations, and the results obtained justify the assumptions made. No allowance is made for "lag."

### Discharge Measurements of English River at Manitou Falls in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| July 30.... | Taylor, J. R..... | 247 | 5,801 | 3.73 | 101.86 | 21,666 | ..... |
| " 30.... | " .... | 247 | 5,801 | 3.75 | 101.86 | 21,742 | ..... |

# Daily Gauge Height and Discharge of English River at Manitou Falls for 1915-6

Drainage Area, 14,600 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | ..... | ..... | ..... | ..... | ..... | ..... | 92.20 | 8110 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 101.75 | 21400 | 97.50 | 15450 | ..... | ..... |
| 2 | 92.31 | 8250 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 92.00 | 7850 | 98.07 | 16250 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 | ..... | ..... | 93.55 | 9860 | ..... | ..... | ..... | ..... | 91.35 | 7030 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 4 | ..... | ..... | ..... | ..... | 92.86 | 8970 | 92.20 | 8110 | ..... | .... | 90.45 | 5980 | ..... | ..... | ..... | ..... | 101.75 | 21400 | 101.40 | 20910 | ..... | ..... | ..... | ..... |
| 5 | 92.45 | 8440 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 92.45 | 8430 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 90.45 | 5980 | ..... | ..... | 98.73 | 17170 | ..... | ..... | ..... | ..... | 97.47 | 15410 | ..... | ..... |
| 7 | ..... | ..... | 93.75 | 10120 | 92.86 | 8970 | ..... | ..... | 91.25 | 6910 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 8 | ..... | ..... | ..... | ..... | ..... | ..... | 92.10 | 7980 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | 101.75 | 21400 | 100.92 | 20240 | ..... | ..... | ..... | ..... |
| 9 | 92.20 | 8110 | 93.55 | 9860 | ..... | ..... | ..... | ..... | ..... | .... | ..... | ..... | 92.90 | 9020 | 99.55 | 18320 | ..... | ..... | ..... | ..... | 96.75 | 14400 | ..... | ..... |
| 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 91.10 | 6730 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 11 | ..... | ..... | ..... | ..... | 92.86 | 8970 | 92.10 | 7980 | ..... | .... | 90.35 | 6100 | ..... | ..... | ..... | ..... | 102.00 | 21750 | 100.35 | 19440 | ..... | ..... | ..... | ..... |
| 12 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 93.30 | 9540 | ..... | ..... | ..... | ..... | ..... | ..... | 96.95 | 14680 | ..... | ..... |
| 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 90.92 | 6510 | ..... | ..... | ..... | ..... | 100.15 | 19160 | ..... | ..... | ..... | ..... | ..... | ..... | 94.40 | 11110 |
| 14 | ..... | ..... | 93.30 | 9540 | 92.83 | 8930 | ..... | ..... | ..... | ..... | 90.67 | 6230 | ..... | ..... | ..... | ..... | 102.10 | 21890 | ..... | ..... | ..... | ..... | ..... | ..... |
| 15 | ..... | ..... | ..... | ..... | ..... | ..... | 92.00 | 7850 | ..... | .... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 99.80 | 18670 | 96.47 | 14010 | ..... | ..... |
| 16 | 92.00 | 7850 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 93.75 | 10120 | 100.47 | 19610 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 17 | ..... | ..... | 93.20 | 9410 | ..... | ..... | ..... | ..... | 90.80 | 6370 | ..... | ..... | ..... | ..... | 100.65 | 19860 | ..... | ..... | ..... | ..... | ..... | ..... | 94.16 | 10770 |
| 18 | ..... | ..... | ..... | ..... | 92.78 | 8860 | 91.89 | 7710 | ..... | .... | 90.67 | 6230 | ..... | ..... | ..... | ..... | 102.66 | 22660 | 99.75 | 18600 | 96.60 | 14190 | ..... | ..... |
| 19 | 92.10 | 7980 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 94.49 | 11090 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 101.05 | 20420 | ..... | ..... | ..... | ..... | ..... | ..... | 93.95 | 10480 |
| 21 | ..... | ..... | 93.08 | 9250 | 92.71 | 8770 | ..... | ..... | 90.69 | 6250 | 90.80 | 6370 | ..... | ..... | ..... | ..... | 102.05 | 21820 | ..... | ..... | ..... | ..... | ..... | ..... |
| 22 | ..... | ..... | ..... | ..... | ..... | ..... | 91.85 | 7660 | ..... | .... | ..... | ..... | ..... | ..... | 101.27 | 20730 | ..... | ..... | 99.55 | 18320 | ..... | ..... | ..... | ..... |
| 23 | 91.80 | 7590 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 95.75 | 13000 | 101.55 | 21120 | ..... | ..... | ..... | ..... | 96.15 | 13560 | ..... | ..... |
| 24 | ..... | ..... | 92.98 | 9120 | ..... | ..... | ..... | ..... | 90.69 | 6250 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 93.72 | 10160 |
| 25 | ..... | ..... | ..... | ..... | 92.45 | 8420 | 91.80 | 7590 | ..... | .... | 91.02 | 6630 | ..... | ..... | ..... | ..... | 102.05 | 21820 | 99.05 | 17620 | ..... | ..... | 93.50 | 9850 |
| 26 | 93.75 | 10120 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 95.50 | 14050 | ..... | ..... | ..... | ..... | ..... | ..... | 95.75 | 13000 | ..... | ..... |
| 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 101.75 | 21400 | ..... | ..... | ..... | ..... | ..... | ..... | 93.50 | 9850 |
| 28 | ..... | ..... | 92.86 | 8970 | 92.32 | 8270 | ..... | ..... | 90.69 | 6250 | 91.10 | 6730 | ..... | ..... | 101.85 | 21540 | 102.00 | 21750 | ..... | ..... | ..... | ..... | 93.40 | 9710 |
| 29 | ..... | ..... | ..... | ..... | ..... | ..... | 91.55 | 7270 | ..... | .... | ..... | ..... | ..... | ..... | 102.00 | 21750 | ..... | ..... | 98.37 | 16670 | 95.55 | 12720 | ..... | ..... |
| 30 | 93.55 | 9860 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 97.00 | 14750 | 102.10 | 21890 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 31 | ..... | ..... | 92.86 | 8970 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Gauge heights interpolated from Ear Falls and discharges applied from Manitou Falls rating curve.

## Monthly Discharge of English River at Manitou Falls for 1915-6

Drainage Area, 14,600 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November. (1915) | 19,120 | 7,850 | 8,525 | .69 | .54 | .58 | .65 |
| December. " | 10,120 | 8,970 | 9,455 | .69 | .61 | .65 | .75 |
| January ..(1916) | 8,970 | 8,270 | 8,770 | .61 | .57 | .60 | .69 |
| February ..... | 8,110 | 7,270 | 7,807 | .56 | .50 | .53 | .57 |
| March ..... | 7,030 | 6,090 | 6,488 | .48 | .42 | .44 | .51 |
| April ..... | 6,730 | 5,980 | 6,281 | .46 | .41 | .43 | .48 |
| May ..... | 14,750 | 7,850 | 10,872 | 1.01 | .54 | .74 | .85 |
| June..... | 21,890 | 16,250 | 19,940 | 1.50 | 1.11 | 1.37 | 1.53 |
| July ..... | 22,660 | 21,400 | 20,811 | 1.55 | 1.47 | 1.43 | 1.65 |
| August ..... | 21,400 | 16,670 | 19,097 | 1.47 | 1.14 | 1.31 | 1.51 |
| September ..... | 15,450 | 12,720 | 14,158 | 1.06 | .87 | .97 | 1.08 |
| October..... | 11,110 | 9,710 | 10,276 | .76 | .67 | .70 | .81 |
| The year ..... | 22,660 | 5,980 | 12,313 | 1.55 | .41 | .84 | 11.43 |

## English River near Oak Falls

**Location**—About one mile above the upper fall of Oak Falls, and about one-half mile below Wilcox Lake, District of Kenora.

**Records Available**—Discharge measurements from August, 1914, to October, 1916. Bi-weekly gauge heights interpolated from observations at Ear Falls, February 1st, 1915, to October 31st, 1916.

**Drainage Area**—15,570 square miles.

**Gauge**—Vertical staff with enamelled face screwed to a cedar post and firmly wedged in rock on the right bank 200 feet above the metering section. The zero on the gauge (elev. 194.09) is referred to a bench mark (elev. 200.00 painted on a rock in the river near the right bank and 20 feet above the final point for soundings. The initial point for soundings is located on the left bank, and consists of the head of a nail driven in the side of a 12-inch poplar blazed and marked I.P., N. 70° W.

**Channel and Control**—Straight for about 300 feet above and ½ mile below the station. Both banks are high, rocky and wooded, and not liable to overflow. The bed of the stream is rocky and practically permanent. The current is sluggish above and moderately swift below the station, a small rapid existing about 800 feet below.

**Discharge Measurements**—Made from a canoe with a small Price current meter.

**Remarks**—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to the gauge at Oak Falls. Gauge readings taken on nearly the same day were used in making up curves for the two stations, and the results obtained justify the assumptions made. No allowance is made for lag.

### Discharge Measurements of English River near Oak Falls in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 Aug. 2.... | Taylor, J. R.... | 443 | 8,348 | 2.83 | 200.30 | 235.95 | ..... |

## Daily Gauge Height and Discharge of English River near Oak Falls for 1915-6

Drainage Area, 15,570 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | ..... | ..... | ..... | ..... | ..... | ..... | 196.23 | 8640 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 200.33 | 23720 | 198.52 | 16480 | ..... | ..... |
| 2 | 196.29 | 8820 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 196.14 | 8500 | 198.75 | 17400 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3 | ..... | ..... | 196.92 | 10710 | ..... | ..... | ..... | ..... | 195.80 | 7620 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 4 | ..... | ..... | ..... | ..... | 196.56 | 9630 | 196.23 | 8640 | ..... | ..... | 196.35 | 6620 | ..... | ..... | ..... | ..... | 200.20 | 23200 | 200.06 | 22640 | ..... | ..... | ..... | ..... |
| 5 | 196.36 | 9030 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 196.35 | 9000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 195.35 | 6620 | ..... | ..... | 199.00 | 18400 | ..... | ..... | ..... | ..... | 198.50 | 16400 | ..... | ..... |
| 7 | ..... | ..... | 197.01 | 10980 | 196.56 | 9630 | ..... | ..... | 195.75 | 7520 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 8 | ..... | ..... | ..... | ..... | ..... | ..... | 196.18 | 8500 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 200.20 | 23200 | 199.87 | 21880 | ..... | ..... | ..... | ..... |
| 9 | 196.23 | 8640 | 196.92 | 10710 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 196.58 | 9690 | 199.34 | 19760 | ..... | ..... | ..... | ..... | 198.23 | 15320 | ..... | ..... |
| 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 195.67 | 7260 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 11 | ..... | ..... | ..... | ..... | 196.56 | 9630 | 196.18 | 8500 | ..... | ..... | 195.40 | 6720 | ..... | ..... | ..... | ..... | 200.29 | 23560 | 199.75 | 21400 | ..... | ..... | ..... | ..... |
| 12 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 196.78 | 10290 | ..... | ..... | ..... | ..... | ..... | ..... | 198.30 | 15600 | ..... | ..... |
| 13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 195.57 | 7060 | ..... | ..... | ..... | ..... | 199.57 | 20680 | ..... | ..... | ..... | ..... | ..... | ..... | 197.29 | 11860 |
| 14 | ..... | ..... | 196.80 | 10350 | 196.55 | 9600 | ..... | ..... | ..... | ..... | 195.47 | 6860 | ..... | ..... | ..... | ..... | 200.33 | 23720 | ..... | ..... | ..... | ..... | ..... | ..... |
| 15 | ..... | ..... | ..... | ..... | ..... | ..... | 196.12 | 8350 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 199.44 | 20160 | 198.22 | 15280 | ..... | ..... |
| 16 | 196.12 | 8350 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 197.02 | 11010 | 199.70 | 21200 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 17 | ..... | ..... | 196.74 | 10170 | ..... | ..... | ..... | ..... | 195.52 | 6960 | ..... | ..... | ..... | ..... | 199.77 | 21480 | ..... | ..... | ..... | ..... | ..... | ..... | 197.24 | 11690 |
| 18 | ..... | ..... | ..... | ..... | 196.53 | 9540 | 196.06 | 8200 | ..... | ..... | 195.47 | 6860 | ..... | ..... | ..... | ..... | 200.55 | 24600 | 199.42 | 20080 | 198.07 | 14660 | ..... | ..... |
| 19 | 196.18 | 8500 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 197.37 | 12140 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 199.92 | 22080 | ..... | ..... | ..... | ..... | ..... | ..... | 197.13 | 11340 |
| 21 | ..... | ..... | 196.67 | 9960 | 196.49 | 9420 | ..... | ..... | 195.46 | 6840 | 195.53 | 6980 | ..... | ..... | ..... | ..... | 200.32 | 23680 | ..... | ..... | ..... | ..... | ..... | ..... |
| 22 | ..... | ..... | ..... | ..... | ..... | ..... | 196.05 | 8170 | ..... | ..... | ..... | ..... | ..... | ..... | 200.00 | 22400 | ..... | ..... | 199.34 | 19760 | ..... | ..... | ..... | ..... |
| 23 | 196 02 | 8100 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 197.82 | 13760 | 200.12 | 22880 | ..... | ..... | ..... | ..... | 197.78 | 13600 | ..... | ..... |
| 24 | ..... | ..... | 196.11 | 8330 | ..... | ..... | ..... | ..... | 195.46 | 6840 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 197.02 | 11010 |
| 25 | ..... | ..... | ..... | ..... | 196.36 | 9030 | 196.02 | 8100 | ..... | ..... | 195.63 | 7180 | ..... | ..... | ..... | ..... | 200.32 | 23680 | 199.13 | 18920 | ..... | ..... | 196.91 | 10680 |
| 26 | 197.01 | 10980 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 198.12 | 14900 | ..... | ..... | ..... | ..... | ..... | ..... | 197.82 | 13760 | ..... | ..... |
| 27 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 200.20 | 23200 | ..... | ..... | ..... | ..... | ..... | ..... | 196.91 | 10680 |
| 28 | ..... | ..... | 196.56 | 9630 | 196.29 | 8820 | ..... | ..... | 195.46 | 6840 | 195.68 | 7280 | ..... | ..... | 200.24 | 23280 | 200.29 | 23560 | ..... | ..... | ..... | ..... | 196.85 | 10500 |
| 29 | ..... | ..... | ..... | ..... | ..... | ..... | 195.90 | 7820 | ..... | ..... | ..... | ..... | ..... | ..... | 200.29 | 23560 | ..... | ..... | 198.87 | 17880 | 197.73 | 13410 | ..... | ..... |
| 30 | 196.92 | 10710 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 198.32 | 15680 | 200.33 | 23720 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 31 | ..... | ..... | 196.56 | 9630 | ..... | ..... | ..... | ..... | 195.40 | 6710 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

NOTE.—Gauge heights interpolated from Ear Falls and discharges applied from Oak Falls rating curve.

## Monthly Discharge of English River near Oak Falls for 1916

Drainage Area, 15,570 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 10,980 | 8,100 | 9,140 | .70 | .52 | .59 | .66 |
| December. " | 10,980 | 8,330 | 10,050 | .70 | .53 | .64 | .74 |
| January ...(1916) | 9,620 | 8,820 | 9,410 | .62 | .57 | .60 | .69 |
| February ..... | 8,640 | 7,820 | 8,320 | .55 | .50 | .53 | .57 |
| March ..... | 7,620 | 6,710 | 7,070 | .49 | .43 | .45 | .52 |
| April. ..... | 7,280 | 6,620 | 6,790 | .47 | .43 | .49 | .55 |
| May. ..... | 15,680 | 8,500 | 11,641 | 1.01 | .55 | .75 | .86 |
| June..... | 23,720 | 17,400 | 21,542 | 1.52 | 1.12 | 1.38 | 1.54 |
| July ..... | 24,600 | 23,200 | 23,650 | 1.58 | 1.49 | 1.52 | 1.75 |
| August ..... | 23,720 | 17,880 | 20,716 | 1.52 | 1.15 | 1.33 | 1.53 |
| September ..... | 16,480 | 13,410 | 14,945 | 1.06 | .86 | .96 | 1.07 |
| October..... | 11,860 | 10,500 | 11,109 | .76 | .67 | .71 | .82 |
| The year..... | 24,600 | 6,620 | 13,260 | 1.58 | .43 | .85 | 11.57 |

## English River at Sturgeon Falls

Location—About 300 feet above the lowest of the three falls known as Sturgeon Falls, District of Kenora, and about 30 miles above the Winnipeg River.

Records Available—Discharge measurements from June, 1914.

Drainage Area—Not measured.

Gauge—Vertical staff with enamelled face, screwed to a 5" hewn spruce post firmly wedged and braced to the left bank about 150 feet below the metering section. The zero on the gauge (elevation 91.52) is referred to a bench mark (elevation 100.00) painted on the left bank 10 feet from the initial point and two feet below the line of section. The initial point for soundings is a nail driven in the side of a 6-inch blazed poplar on the left bank, and marked I.P., N. 10° E.

Channel and Control—There are deep bays on both sides of the river above the station, from which the channel takes a gentle curve to the left, thence flowing comparatively straight and narrowing to the station and falls. The bed is composed of rock with a little gravel in the centre, and practically permanent. Both banks are high, rocky and wooded, and will not overflow. The velocity is low at the right bank, and very slight backflow exists at the left.

Discharge Measurements—Made from a canoe with a small Price current meter.

## Footprint River at Rainy Lake Falls

Location—100 feet above the crest of the lowest fall, at the mouth of the Footprint River where it flows into the north-west bay of Rainy Lake, on Indian Reserve 17A, District of Rainy River.

Records Available—Monthly discharge measurements from July, 1914. Daily gauge heights, Sept. 18, 1914, to Oct. 31, 1916.

Drainage Area—425 square miles.

Gauge—Vertical steel staff gauge, graduated in feet and inches. The zero on the gauge (elevation 101.30) is referred to a bench mark (elevation 110.51) painted on the ledge of a rock on right bank.

Channel—About 40 feet above the station the channel curves to the left and then runs straigth for about 140 feet, dropping into Rainy Lake. The banks are high, rocky, wooded, and not liable to overflow. The right bank has been burnt over. The bed of the river contains large boulders, and one channel exists at all stages.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—Relation of gauge height to discharge not affected by ice.

Regulation—Occasional operations of the dam at Footprint Lake cause fluctuations in the river at the gauge.

Accuracy—The rating curve is well defined. Open water curve used throughout the year.

Observer—John Lyons, Fort Frances P.O.

### Discharge Measurements of Footprint River at Rainy Lake Falls in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| June 4.... | Taylor, J. R..... | 137 | 455 | 2.74 | 104.72 | 1246 | ..... |
| July 12.... | " .... | 66 | 177 | 3.56 | 103.53 | 628(a) | ..... |

(a) Reading taken 70 ft. above regular section.

## Daily Gauge Height and Discharge of Footprint River at Rainy Lake Falls for 1915-6

Drainage Area, 590 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.63 | 108 | 103.63 | 680 | 104.83 | 1300 | 103.72 | 725 | 102.97 | 390 | 102.47 | 252 | 102.01 | 159 |
| 2 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.63 | 108 | 103.76 | 745 | 104.73 | 1250 | 103.72 | 725 | 102.97 | 390 | 102.42 | 240 | 102.01 | 159 |
| 3 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.63 | 108 | 103.80 | 765 | 104.73 | 1250 | 103.72 | 725 | 102.97 | 390 | 102.42 | 240 | 102.01 | 159 |
| 4 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.63 | 108 | 103.80 | 765 | 104.63 | 1190 | 103.74 | 735 | 102.97 | 390 | 102.42 | 240 | 101.97 | 153 |
| 5 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.63 | 108 | 103.82 | 775 | 104.72 | 1240 | 103.74 | 735 | 102.97 | 390 | 102.42 | 240 | 101.92 | 146 |
| 6 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 103.84 | 785 | 104.76 | 1260 | 103.74 | 735 | 102.97 | 390 | 102.42 | 240 | 101.92 | 146 |
| 7 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 103.88 | 805 | 104.63 | 1190 | 103.74 | 735 | 102.92 | 372 | 102.42 | 240 | 101.92 | 146 |
| 8 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 103.97 | 850 | 104.63 | 1190 | 103.74 | 735 | 102.92 | 372 | 102.38 | 230 | 101.92 | 146 |
| 9 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 104.01 | 870 | 104.55 | 1150 | 103.63 | 680 | 102.88 | 360 | 102.38 | 230 | 101.88 | 140 |
| 10 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 104.05 | 890 | 104.51 | 1130 | 103.57 | 650 | 102.88 | 360 | 102.38 | 230 | 101.88 | 140 |
| 11 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 104.13 | 930 | 104.47 | 1100 | 103.55 | 640 | 102.84 | 347 | 102.38 | 230 | 101.84 | 135 |
| 12 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 104.22 | 975 | 104.47 | 1100 | 103.55 | 640 | 102.84 | 347 | 102.38 | 230 | 101.84 | 135 |
| 13 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 104.30 | 1030 | 104.38 | 1060 | 103.51 | 620 | 102.88 | 360 | 102,34 | 222 | 101.84 | 135 |
| 14 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | ..... | 1030 | 104.38 | 1060 | 103.51 | 620 | 102.88 | 360 | 102.34 | 222 | 101.80 | 129 |
| 15 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | ..... | 1065 | 104.38 | 1060 | 103.47 | 600 | 102.84 | 347 | 102.30 | 213 | 101.80 | 129 |
| 16 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.42 | 87 | 101.63 | 108 | ..... | 1065 | 104.38 | 1060 | 103.47 | 600 | 102.84 | 347 | 102.30 | 213 | 101.80 | 129 |
| 17 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.42 | 87 | 101.80 | 129 | ..... | 1120 | 104.34 | 1035 | 103.37 | 600 | 102.72 | 315 | 102.30 | 213 | 101.76 | 124 |
| 18 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.47 | 92 | 101.97 | 153 | ..... | 1120 | 104.47 | 1100 | 103.42 | 575 | 102.68 | 305 | 102.30 | 213 | 101.76 | 124 |
| 19 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.55 | 100 | 102.22 | 196 | ..... | 1175 | 104.47 | 1100 | 103.42 | 575 | 102.68 | 305 | 102.30 | 213 | 101.76 | 124 |
| 20 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.55 | 100 | 102.42 | 240 | ..... | 1175 | 104.47 | 1100 | 103.38 | 555 | 102.63 | 292 | 102.30 | 213 | 101.76 | 124 |
| 21 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.55 | 100 | 102.55 | 272 | 104.70 | 1230 | 104.47 | 1100 | 103.47 | 600 | 102.63 | 292 | 102.22 | 196 | 101.72 | 119 |
| 22 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.57 | 102 | 102.68 | 305 | 104.74 | 1250 | 104.47 | 1100 | 103.47 | 600 | 102.63 | 292 | 102.22 | 196 | 101.72 | 119 |
| 23 | 101.34 | 79 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.57 | 102 | 102.80 | 335 | 104.78 | 1270 | 104.42 | 1080 | 103.22 | 480 | 102.59 | 282 | 102.22 | 196 | 101.72 | 119 |
| 24 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.57 | 102 | 102.92 | 372 | 104.78 | 1270 | 104.22 | 980 | 103.18 | 470 | 102.51 | 262 | 102.13 | 179 | 101.72 | 119 |
| 25 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 103.05 | 417 | 104.86 | 1320 | 104.05 | 890 | 103.13 | 445 | 102.51 | 262 | 102.15 | 179 | 101.72 | 119 |
| 26 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 103.22 | 483 | 104.95 | 1370 | 103.90 | 815 | 103.13 | 445 | 102.51 | 262 | 102.09 | 172 | 101.72 | 119 |
| 27 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 103.26 | 499 | 105.03 | 1410 | 103.80 | 765 | 103.13 | 445 | 102.51 | 262 | 102.09 | 172 | 101.76 | 124 |
| 28 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 103.38 | 555 | ..... | 1410 | 103.72 | 725 | 103.13 | 445 | 102.51 | 262 | 102.09 | 172 | 101.76 | 124 |
| 29 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | 101.59 | 104 | 103.47 | 600 | ..... | 1360 | 103.72 | 725 | 103.13 | 445 | 102.47 | 252 | 102.05 | 165 | 101.76 | 124 |
| 30 | 101.38 | 83 | 101.38 | 83 | 101.38 | 83 | ..... | .... | 101.59 | 104 | 103.55 | 640 | ..... | 1360 | 103.72 | 725 | 103.05 | 418 | 102.47 | 252 | 102.05 | 165 | 101.76 | 124 |
| 31 | ..... | ..... | 101.38 | 83 | 103.38 | 83 | ..... | .... | 101.63 | 108 | ..... | .... | ..... | 1300 | ..... | .... | 103.01 | 403 | 102.47 | 252 | ..... | ..... | 101.76 | 124 |

## Monthly Discharge of Footprint River at Rainy Lake Falls for 1915-6

Drainage Area, 590 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 83 | 79 | 80 | .14 | .13 | .14 | .16 |
| December " | 83 | 83 | 83 | .14 | .14 | .14 | .16 |
| January.. (1916) | 83 | 83 | 83 | .14 | .14 | .14 | .16 |
| February..... | 83 | 83 | 83 | .14 | .14 | .14 | .15 |
| March ..... | 108 | 83 | 92 | .18 | .14 | .16 | .18 |
| April ..... | 640 | 104 | 229 | 1.08 | .18 | .39 | .45 |
| May ..... | 1,410 | 680 | 1,070 | 2.39 | 1.15 | 1.81 | 2.09 |
| June ..... | 1,300 | 725 | 1,061 | 2.20 | 1.23 | 1.80 | 2.01 |
| July..... | 735 | 403 | 594 | 1.25 | .68 | 1.01 | 1.16 |
| August ..... | 390 | 252 | 325 | .66 | .43 | .55 | .63 |
| September..... | 252 | 165 | 212 | .43 | .28 | .36 | .40 |
| October ..... | 159 | 119 | 137 | .27 | .20 | .23 | .27 |
| The year ..... | 1,410 | 79 | 338 | 2.39 | .14 | .57 | 7.76 |

## Manitou River at Devil's Cascades

Location—About 150 feet above the old dam, at the head of the Devil's Cascades, Rainy River District.

Records Available—Monthly discharge measurements from July, 1914. Daily gauge heights, July 15, 1914, to June 30th, 1916.

Drainage Area—435 square miles.

Gauge—An inclined steel staff, graduated in feet and inches, and located on the face of the old dam. The zero of the gauge is at an elevation of 139.38 feet referred to a bench mark (elevation 147.37) painted on a rock 1 foot east of the initial point for soundings.

Channel—Straight for about 150 feet above and 400 feet below the station. The right bank is high, rocky, wooded, and not liable to overflow, but the left bank is low and wooded, with a gradually rising bank, which is not liable to overflow unless the dam is operated. The bed of the stream is composed of rock, and the current is slow, one channel existing at all stages.

Discharge Measurements—Made from canoe or ice with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is affected by ice during the cold period, and measurements are made to determine the winter flow.

Regulation—Several dams exist on the river between the section and Manitou Lake, which are not in operation at present. The operation of the dam just above the station causes fluctuations at the gauge.

Accuracy—A fairly well-defined rating curve has been developed, and records are considered fair.

### Discharge Measurements of Manitou River at Devil's Cascades in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| June 4.... | Taylor, J. R. ... | 117 | 797 | 2.02 | 146.89 | 1613 | ..... |
| July 12.... | " .... | 116 | 699 | 1.25 | 145.99 | 874 | ..... |

## Seine River at Skunk Rapids

Location—About 200 feet above Skunk Rapids, and 1 mile upstream from the Canadian Northern Ry. bridge. One-half mile north of the C. N. Ry. tracks, and 1 mile west of La Seine Station, in the District of Rainy River.

Records Available—Discharge measurements from August, 1914. Daily gauge heights, Sept. 22, 1914, to April 30, 1915, and Oct. 1st, 1915, to Oct. 31st, 1916.

Drainage Area—2,300 square miles.

Gauge—Vertical steel staff gauge with enamelled face, graduated in feet and inches, and located near La Seine station, on the C. N. Ry. The zero on the gauge is at an elevation of 1,138.21 feet, which is referred to a bench mark (elevation 1,152.73) painted on a large boulder, on the right bank of the river, 6 feet from a 6-inch poplar tree used as a final point for soundings. The initial point is on the left bank and consists of a 2-inch spruce tree, blazed and marked I.P. with white paint. "H. E. P. Comm." is painted on the rock directly below the spruce tree.

Channel and Control—Straight for about 500 feet above and 200 feet below the station to the rapids. The right bank of the river curves into a point at the rapids forming a narrow channel. The velocity of the river is slow and the banks are high, rocky and wooded. This land has been burnt over, but most of the trees are still standing. The bed of the stream is sandy and clean, with a few boulders near the right bank. One channel exists at all stages.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months and measurements are made to determine the winter flow.

Accuracy—Open water rating curve is fairly well defined and estimates are considered good.

Observer—Wm. Clark, Flanders.

### Discharge Measurements of Seine River at Skunk Rapids in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| June 6.... | Taylor, J. R.... | 290 | 3,045 | 2.39 | 101.45 | 7261 | ..... |
| " 6.... | " .... | 209 | 3,045 | 2.40 | 101.45 | 7305 | ..... |
| July 13.... | " .... | 206 | 2,449 | 1.33 | 98.93 | 3258 | ..... |

## Daily Gauge Height of Seine River at Skunk Rapids for 1915-6

Drainage Area, 2,300 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 97.39 | ..... | 96.93 | ..... | 95.97 | ..... | 95.34 | ..... | 94.97 | ..... | 95.05 | ..... | 99.64 | ..... | 102.22 | ..... | 99.49 | ..... | 97.81 | ..... | 96.78 | ..... | 97.43 | ..... |
| 2 | 97.39 | ..... | 96.89 | ..... | 95.97 | ..... | 95.30 | ..... | 94.97 | ..... | 95.14 | ..... | 99.70 | ..... | 102.14 | ..... | 99.43 | ..... | 97.74 | ..... | 96.76 | ..... | 97.43 | ..... |
| 3 | 97.40 | ..... | 96.89 | ..... | 95.97 | ..... | 95.30 | ..... | 94.97 | ..... | 95.18 | ..... | 99.78 | ..... | 101.93 | ..... | 99.43 | ..... | 97.70 | ..... | 96.81 | ..... | 97.43 | ..... |
| 4 | 97.41 | ..... | 96.80 | ..... | 95.93 | ..... | 95.26 | ..... | 94.97 | ..... | 95.22 | ..... | 99.89 | ..... | 101.80 | ..... | 99.35 | ..... | 97.64 | ..... | 97.85 | ..... | 97.41 | ..... |
| 5 | 97.41 | ..... | 96.80 | ..... | 95.93 | ..... | 95.22 | ..... | 94.93 | ..... | 95.22 | ..... | 100.10 | ..... | 101.72 | ..... | 99.26 | ..... | 97.55 | ..... | 96.85 | ..... | 97.33 | ..... |
| 6 | 97.41 | ..... | 96.80 | ..... | 95.95 | ..... | 95.22 | ..... | 94.89 | ..... | 95.22 | ..... | 100.18 | ..... | 101.45 | ..... | 99.24 | ..... | 97.60 | ..... | 96.85 | ..... | 97.27 | ..... |
| 7 | 97.44 | ..... | 96.72 | ..... | 95.89 | ..... | 95.18 | ..... | 94.89 | ..... | 95.22 | ..... | 100.39 | ..... | 101.31 | ..... | 99.18 | ..... | 97.55 | ..... | 96.85 | ..... | 97.26 | ..... |
| 8 | 97.47 | ..... | 96.72 | ..... | 95.89 | ..... | 95.14 | ..... | 94.84 | ..... | 95.26 | ..... | 100.68 | ..... | 101.14 | ..... | 99.14 | ..... | 97.47 | ..... | 96.85 | ..... | 97.26 | ..... |
| 9 | 97.47 | ..... | 96.72 | ..... | 95.87 | ..... | 95.14 | ..... | 94.84 | ..... | 95.30 | ..... | 100.93 | ..... | 101.14 | ..... | 99.08 | ..... | 97.41 | ..... | 96.83 | ..... | 97.26 | ..... |
| 10 | 97.52 | ..... | 96.51 | ..... | 95.84 | ..... | 95.10 | ..... | 94.84 | ..... | 95.30 | ..... | 101.14 | ..... | 101.03 | ..... | 99.03 | ..... | 97.39 | ..... | 96.81 | ..... | 97.26 | ..... |
| 11 | 97.60 | ..... | 96.47 | ..... | 95.87 | ..... | 95.05 | ..... | 94.80 | ..... | 95.39 | ..... | 101.14 | ..... | 100.93 | ..... | 98.99 | ..... | 97.31 | ..... | 96.78 | ..... | 97.26 | ..... |
| 12 | 97.70 | ..... | 96.47 | ..... | 95.80 | ..... | 95.01 | ..... | 94.80 | ..... | 95.43 | ..... | 101.14 | ..... | 100.91 | ..... | 98.93 | ..... | 97.24 | ..... | 96.76 | ..... | 97.24 | ..... |
| 13 | 97.72 | ..... | 96.41 | ..... | 95.76 | ..... | 95.01 | ..... | 94.80 | ..... | 95.45 | ..... | 101.34 | ..... | 100.91 | ..... | 98.89 | ..... | 97.20 | ..... | 96.70 | ..... | 97.22 | ..... |
| 14 | 97.39 | ..... | 96.34 | ..... | 95.76 | ..... | 95.01 | ..... | 94.80 | ..... | 95.89 | ..... | 101.43 | ..... | 100.76 | ..... | 98.85 | ..... | 97.18 | ..... | 96.74 | ..... | 97.20 | ..... |
| 15 | 97.30 | ..... | 96.26 | ..... | 95.72 | ..... | 94.97 | ..... | 94.80 | ..... | 96.14 | ..... | 101.43 | ..... | 100.68 | ..... | 98.78 | ..... | 97.12 | ..... | 96.76 | ..... | 97.18 | ..... |
| 16 | 97.22 | ..... | 96.22 | ..... | 95.68 | ..... | 94.97 | ..... | 94.80 | ..... | 96.55 | ..... | 101.60 | ..... | 100.64 | ..... | 98.72 | ..... | 97.12 | ..... | 96.76 | ..... | 97.18 | ..... |
| 17 | 97.14 | ..... | 96.22 | ..... | 95.64 | ..... | 94.97 | ..... | 94.80 | ..... | 96.72 | ..... | 101.64 | ..... | 100.51 | ..... | 98.66 | ..... | 97.18 | ..... | 97.76 | ..... | 97.16 | ..... |
| 18 | 97.05 | ..... | 96.16 | ..... | 95.64 | ..... | 94.97 | ..... | 94.80 | ..... | 97.05 | ..... | 101.72 | ..... | 100.39 | ..... | 98.60 | ..... | 97.12 | ..... | 96.76 | ..... | 97.16 | ..... |
| 19 | 97.14 | ..... | 96.14 | ..... | 95.64 | ..... | 94.97 | ..... | 94.80 | ..... | 97.84 | ..... | 101.78 | ..... | 100.31 | ..... | 98.51 | ..... | 97.14 | ..... | 96.76 | ..... | 97.18 | ..... |
| 20 | 97.14 | ..... | 96.10 | ..... | 95.64 | ..... | 94.97 | ..... | 94.80 | ..... | 98.39 | ..... | 101.82 | ..... | 100.16 | ..... | 98.43 | ..... | 97.08 | ..... | 96.76 | ..... | 97.18 | ..... |
| 21 | 97.05 | ..... | 96.05 | ..... | 95.57 | ..... | 94.97 | ..... | 94.80 | ..... | 98.64 | ..... | 101.89 | ..... | 99.97 | ..... | 98.35 | ..... | 97.08 | ..... | 97.01 | ..... | 97.18 | ..... |
| 22 | 97.05 | ..... | 96.05 | ..... | 95.55 | ..... | 94.97 | ..... | 94.80 | ..... | 98.72 | ..... | 101.89 | ..... | 99.93 | ..... | 98.31 | ..... | 97.16 | ..... | 97.18 | ..... | 97.18 | ..... |
| 23 | 97.05 | ..... | 96.01 | ..... | 95.55 | ..... | 94.97 | ..... | 94.80 | ..... | 99.05 | ..... | 101.97 | ..... | 99.89 | ..... | 98.24 | ..... | 97.16 | ..... | 97.26 | ..... | 97.18 | ..... |
| 24 | 96.97 | ..... | 96.01 | ..... | 95.51 | ..... | 94.97 | ..... | 94.80 | ..... | 99.14 | ..... | 101.91 | ..... | 99.89 | ..... | 98.18 | ..... | 97.12 | ..... | 97.51 | ..... | 97.12 | ..... |
| 25 | 96.97 | ..... | 96.01 | ..... | 95.51 | ..... | 94.97 | ..... | 94.80 | ..... | 99.18 | ..... | 101.89 | ..... | 99.85 | ..... | 98.16 | ..... | 97.10 | ..... | 97.60 | ..... | 97.03 | ..... |
| 26 | 96.97 | ..... | 95.99 | ..... | 95.47 | ..... | 94.97 | ..... | 94.80 | ..... | 99.22 | ..... | 101.84 | ..... | 99.76 | ..... | 98.10 | ..... | 97.08 | ..... | 97.60 | ..... | 97.01 | ..... |
| 27 | 96.97 | ..... | 95.97 | ..... | 95.47 | ..... | 94.97 | ..... | 94.89 | ..... | 99.34 | ..... | 101.80 | ..... | 99.68 | ..... | 98.08 | ..... | 97.03 | ..... | 97.60 | ..... | 97.01 | ..... |
| 28 | 96.97 | ..... | 95.97 | ..... | 95.47 | ..... | 94.97 | ..... | 94.89 | ..... | 99.43 | ..... | 101.80 | ..... | 99.74 | ..... | 98.01 | ..... | 96.99 | ..... | 97.51 | ..... | 97.01 | ..... |
| 29 | 96.97 | ..... | 95.97 | ..... | 95.47 | ..... | 94.97 | ..... | 94.93 | ..... | 99.51 | ..... | 101.80 | ..... | 99.60 | ..... | 97.92 | ..... | 96.91 | ..... | 97.51 | ..... | 96.99 | ..... |
| 30 | 96.93 | ..... | 95.97 | ..... | 95.43 | ..... | ..... | ..... | 94.97 | ..... | 99.55 | ..... | 101.80 | ..... | 99.55 | ..... | 97.88 | ..... | 96.87 | ..... | 97.45 | ..... | 96.99 | ..... |
| 31 | ..... | ..... | 95.97 | ..... | 95.39 | ..... | ..... | ..... | 95.01 | ..... | ..... | ..... | 101.89 | ..... | ..... | ..... | 97.84 | ..... | 96.85 | ..... | ..... | ..... | 97.01 | ..... |

## Turtle River at Mountain Rapids

Location—About 300 feet above Mountain Rapids, and about 8 miles from the Olive Mine, 12 miles from Mine Centre, which is on the C. N. Ry., in the Rainy River District.

Records Available—Monthly discharge measurements from August, 1914. Daily gauge heights, Aug. 9, 1914, to Oct. 31, 1916.

Drainage Area—1,760 square miles.

Gauge—Vertical steel staff gauge with enamelled face, graduated in feet and inches, and fastened on a crib pier at the C. N. Ry. saw mill, 12 miles from the station. The gauge is located 1,000 feet south of the mouth of Little Turtle River, on the east shore of Little Turtle Lake. Zero on gauge (elevation 83.45) is referred to a bench mark established on a rock with white paint, on the left bank of the river, four feet south of a blazed pine tree, marked I.P. with white paint, which is used as the initial point for soundings. The elevation of this bench mark is 96.00, which is referred to another bench mark (assumed elevation 100.00) established on a rock with white paint, 35 feet north-east of the gauge, at the C. N. Ry. Mill at Mine Centre.

Channel and Control—Straight for about 1,000 feet above and below the station, the water running slowly. The banks are high, wooded and rocky. The bed of the stream is sandy and clean, one channel existing at all stages. The river is used extensively for log driving, and the log jams in Otter Falls affect the section somewhat.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice and measurements are made during the winter to determine the flow.

Accuracy—Open water rating curve fairly well defined between gauge heights 91.50 and 94.50. The relation of gauge height to discharge during the log-driving period is affected by back water from log jams.

Observer—Hiram Smith, Mine Centre.

### Discharge Measurements of Turtle River at Mountain Rapids in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| May 24.... | Taylor, J. R.... | 183 | 3,668 | 1.40 | 96.60 | 5,143 | ..... |
| " 24.... | " .... | 183 | 3,668 | 1.41 | 96.60 | 5,187 | ..... |
| July 13.... | " .... | 177 | 3,510 | .88 | 95.33 | 3,089 (a) | ..... |

(a) River almost filled with logs below rapids.

## Daily Gauge Height of Turtle River at Mountain Rapids for 1915-6

Drainage Area 1,760 Square Miles.

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft* | *Feet* | *Sec-ft.* |
| 1 | 91.33 | ..... | 91.58 | ..... | 91.31 | ..... | 91.31 | ..... | 91.16 | ..... | 91.14 | ..... | ..... | ..... | 96.64 | ..... | 95.62 | ..... | 93.66 | ..... | 92.92 | ..... | 94.00 | ..... |
| 2 | 91.31 | ..... | 91.56 | ..... | 91.31 | ..... | 91.31 | ..... | 91.14 | ..... | 91.14 | ..... | ..... | ..... | 96.81 | ..... | 95.81 | ..... | 93.62 | ..... | 92.89 | ..... | 93.95 | ..... |
| 3 | 91.22 | ..... | 91.56 | ..... | 91.31 | ..... | 91.31 | ..... | 91.14 | ..... | 91.16 | ..... | ..... | ..... | 96.89 | ..... | 95.81 | ..... | 93.60 | ..... | 92.87 | ..... | 93.90 | ..... |
| 4 | 91.22 | ..... | 91.52 | ..... | 91.31 | ..... | 91.29 | ..... | 91.14 | ..... | 91.16 | ..... | ..... | ..... | 96.89 | ..... | 95.82 | ..... | 93.59 | ..... | 97.81 | ..... | 93.83 | ..... |
| 5 | 91.20 | ..... | 91.51 | ..... | 91.31 | ..... | 91.29 | ..... | 91.14 | ..... | 91.16 | ..... | ..... | ..... | 96.97 | ..... | 95.87 | ..... | 93.54 | ..... | 92.87 | ..... | 93.74 | ..... |
| 6 | 91.22 | ..... | 91.51 | ..... | 91.31 | ..... | 91.27 | ..... | 91.14 | ..... | 91.14 | ..... | ..... | ..... | 96.97 | ..... | 95.89 | ..... | 93.58 | ..... | 92.97 | ..... | 93.67 | ..... |
| 7 | 91.18 | ..... | 91.47 | ..... | 91.31 | ..... | 91.27 | ..... | 91.14 | ..... | 91.14 | ..... | ..... | ..... | 96.97 | ..... | 95.89 | ..... | 93.56 | ..... | 93.08 | ..... | 93.62 | ..... |
| 8 | 91.39 | ..... | 91.47 | ..... | 91.31 | ..... | 91.27 | ..... | 91.16 | ..... | 91.14 | ..... | ..... | ..... | 96.97 | ..... | 95.89 | ..... | 93.54 | ..... | 93.14 | ..... | 93.57 | ..... |
| 9 | 91.45 | ..... | 91.47 | ..... | 91.31 | ..... | 91.27 | ..... | 91.16 | ..... | 91.14 | ..... | ..... | ..... | 96.72 | ..... | 95.81 | ..... | 93.48 | ..... | 93.08 | ..... | 93.50 | ..... |
| 10 | 91.51 | ..... | 91.47 | ..... | 91.31 | ..... | 91.24 | ..... | 91.16 | ..... | 91.14 | ..... | ..... | ..... | 96.72 | ..... | 95.74 | ..... | 93.52 | ..... | 92.93 | ..... | 93.41 | ..... |
| 11 | 91.70 | ..... | 91.47 | ..... | 81.31 | ..... | 91.24 | ..... | 91.16 | ..... | 91.16 | ..... | ..... | ..... | 96.69 | ..... | 95.72 | ..... | 93.47 | ..... | 92.89 | ..... | 93.34 | ..... |
| 12 | 91.99 | ..... | 91.47 | ..... | 91.31 | ..... | 91.24 | ..... | 91.16 | ..... | 91.22 | ..... | ..... | ..... | 96.64 | ..... | 95.67 | ..... | 93.41 | ..... | 92.99 | ..... | 93.29 | ..... |
| 13 | 92.06 | ..... | 91.45 | ..... | 91.31 | ..... | 91.24 | ..... | 91.14 | ..... | 91.47 | ..... | ..... | ..... | 96.70 | ..... | 95.37 | ..... | 93.37 | ..... | 93.14 | ..... | 93.23 | ..... |
| 14 | 92.10 | ..... | 91.43 | ..... | 91.31 | ..... | 91.22 | ..... | 91.14 | ..... | 91.56 | ..... | ..... | ..... | 96.65 | ..... | 95.29 | ..... | 93.30 | ..... | 93.17 | ..... | 93.15 | ..... |
| 15 | 92.12 | ..... | 91.43 | ..... | 91.31 | ..... | 91.22 | ..... | 91.14 | ..... | 91.64 | ..... | ..... | ..... | 96.65 | ..... | 95.22 | ..... | 93.24 | ..... | 93.17 | ..... | 93.10 | ..... |
| 16 | 92.10 | ..... | 91.43 | ..... | 91.29 | ..... | 91.22 | ..... | 91.12 | ..... | ..... | ..... | ..... | ..... | 96.58 | ..... | 95.16 | ..... | 93.17 | ..... | 93.14 | ..... | 93.05 | ..... |
| 17 | 92.10 | ..... | 91.39 | ..... | 91.29 | ..... | 91.22 | ..... | 91.12 | ..... | ..... | ..... | ..... | ..... | 96.56 | ..... | 94.99 | ..... | 93.21 | ..... | 93.14 | ..... | 92.95 | ..... |
| 18 | 92.06 | ..... | 91.39 | ..... | 91.29 | ..... | 91.22 | ..... | 91.12 | ..... | ..... | ..... | ..... | ..... | 96.49 | ..... | 94.91 | ..... | 93.20 | ..... | 93.15 | ..... | 92.90 | ..... |
| 19 | 91.97 | ..... | 91.39 | ..... | 91.29 | ..... | 91.20 | ..... | 91.12 | ..... | ..... | ..... | ..... | ..... | 96.43 | ..... | 94.83 | ..... | 93.14 | ..... | 93.20 | ..... | 92.89 | ..... |
| 20 | 91.97 | ..... | 91.39 | ..... | 91.29 | ..... | 91.20 | ..... | 91.10 | ..... | ..... | ..... | ..... | ..... | 96.27 | ..... | 94.74 | ..... | 93.12 | ..... | 93.22 | ..... | 92.89 | ..... |
| 21 | 91.94 | ..... | 91.39 | ..... | 91.29 | ..... | 91.18 | ..... | 91.10 | ..... | ..... | ..... | ..... | ..... | 96.01 | ..... | 94.66 | ..... | 93.06 | ..... | 93.43 | ..... | 92.90 | ..... |
| 22 | 91.87 | ..... | 91.35 | ..... | 91.29 | ..... | 91.18 | ..... | 91.10 | ..... | ..... | ..... | ..... | ..... | 95.81 | ..... | 94.52 | ..... | 93.12 | ..... | 93.72 | ..... | 92.88 | ..... |
| 23 | 91.81 | ..... | 91.35 | ..... | 91.29 | ..... | 91.18 | ..... | 91.10 | ..... | ..... | ..... | ..... | ..... | 95.66 | ..... | 94.41 | ..... | 93.14 | ..... | 93.97 | ..... | 92.84 | ..... |
| 24 | 91.74 | ..... | 91.37 | ..... | 91.29 | ..... | 91.18 | ..... | 91.10 | ..... | ..... | ..... | ..... | ..... | 95.58 | ..... | 94.29 | ..... | 93.14 | ..... | 94.18 | ..... | 92.81 | ..... |
| 25 | 91.72 | ..... | 91.37 | ..... | 91.31 | ..... | 91.18 | ..... | 91.10 | ..... | ..... | ..... | ..... | ..... | 95.49 | ..... | 94.16 | ..... | 93.16 | ..... | 94.22 | ..... | 92.62 | ..... |
| 26 | 91.68 | ..... | 91.37 | ..... | 91.31 | ..... | 91.18 | ..... | 91.10 | ..... | ..... | ..... | 96.64 | ..... | 95.47 | ..... | 94.06 | ..... | 93.14 | ..... | 94.26 | ..... | 92.56 | ..... |
| 27 | 91.64 | ..... | 91.37 | ..... | 91.31 | ..... | 91.18 | ..... | 91.10 | ..... | ..... | ..... | 96.64 | ..... | 95.47 | ..... | 93.99 | ..... | 93.14 | ..... | 94.26 | ..... | 92.55 | ..... |
| 28 | 91.63 | ..... | 91.37 | ..... | 91.31 | ..... | 91.18 | ..... | 91.10 | ..... | ..... | ..... | 96.64 | ..... | 95.47 | ..... | 93.91 | ..... | 93.13 | ..... | 94.24 | ..... | 92.54 | ..... |
| 29 | 91.64 | ..... | 91.35 | ..... | 91.31 | ..... | 91.16 | ..... | 91.10 | ..... | ..... | ..... | 96.56 | ..... | 95.49 | ..... | 93.83 | ..... | 93.08 | ..... | 94.22 | ..... | 92.53 | ..... |
| 30 | 91.62 | ..... | 91.35 | ..... | 91.33 | ..... | ..... | ..... | 91.10 | ..... | ..... | ..... | 96.47 | ..... | 95.53 | ..... | 93.81 | ..... | 93.02 | ..... | 94.08 | ..... | 92.53 | ..... |
| 31 | ..... | ..... | 91.31 | ..... | 91.33 | ..... | ..... | ..... | 91.14 | ..... | ..... | ..... | 96.47 | ..... | ..... | ..... | 93.76 | ..... | 92.96 | ..... | ..... | ..... | 92.60 | ..... |

## Wabigoon River near Quibell

Location—About 200 feet above the second fall from the G.T.P. Railway bridge, and ½ mile below the bridge which spans the first fall. One mile east from Quibell Station, Township of Wabigoon, District of Kenora.

Records Available—Discharge measurements from June, 1914, to October, 1915. Daily gauge heights from August 1, 1914, to October 31, 1916.

Drainage Area—2,400 square miles.

Gauge—Vertical staff with enamelled face screwed to a 5-inch hewn spruce post firmly wedged and braced to the rock on the right bank of the river 1,200 feet above the metering station. The zero on the gauge (elev. 1,061.64) is referred to a bench mark (elev. 1,069.46, G.T.P. datum) painted on a point of rock just below the gauge. The initial point for soundings is a spike driven in the rock on the left bank.

Channel and Control—1,200 feet above the station the channel takes a sharp bend to the right, thence running comparatively straight to the station and falls. The water is sluggish above and moderately swift at the station. The banks are high, rocky and wooded. The bed of the stream is full of boulders and crevices. One channel exists at all stages.

Discharge Measurements—Made from canoe and ice with a small Price current meter.

Regulation—The Dryden Timber and Power Company operate a plant on the Wabigoon River at Dryden, which runs 24 hours per day with the exception of Sundays and holidays.

Winter Flow—Ice formation is very heavy here, and the winter flow is somewhat disturbed by it.

Accuracy—Rating curve fairly well defined, and estimates for open water flow are good.

Observer—D. C. Warner, Quibell.

### Discharge Measurements of Wabigoon River near Quibell, in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| June 14.... | Carmichael, R.M. | 248 | 3,890 | 1.43 | 1070.64 | 5,548 (a) | ..... |
| " 14.... | " .... | 248 | 3,890 | 1.57 | 1070.59 | 6,121 (b) | ..... |
| July 7.... | " .... | 92 | 959 | 2.95 | 1066.59 | 2,832 | ..... |
| " 7.... | " .... | 92 | 959 | 2.91 | 1066.59 | 2,788 | ..... |
| " 7.... | " .... | 92 | 959 | 2.88 | 1066.59 | 2,764 | ..... |

(a) Backwater 30 ft. from left bank due to two large boulders. Trees growing in water 15 ft. from left bank. Not taken at regular section.

(b) Discharge increased by strong wind down stream. Not taken at regular section.

## Daily Gauge Height of Wabigoon River near Quibell for 1915-6

Drainage Area 2,400 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1063.20 | .... | 1063.60 | .... | 1063.22 | .... | 1063.85 | .... | 1063.37 | .... | 1063.20 | .... | 1068.97 | .... | 1071.31 | .... | 1069.24 | .... | 1065.74 | .... | 1064.24 | .... | 1065.29 | .... |
| 2 | 1063.12 | .... | 1063.52 | .... | 1062.22 | .... | 1063.87 | .... | 1063.41 | .... | 1063.18 | .... | 1069.06 | .... | 1071.24 | .... | 1069.18 | .... | 1065.72 | .... | 1064.22 | .... | 1065.33 | .... |
| 3 | 1063.06 | .... | 1063.47 | .... | 1063.22 | .... | 1063.89 | .... | 1063.68 | .... | 1063.14 | .... | 1069.06 | .... | 1071.22 | .... | 1068.72 | .... | 1065.64 | .... | 1064.20 | .... | 1065.79 | .... |
| 4 | 1063.04 | .... | 1063.43 | .... | 1063.20 | .... | 1063.91 | .... | 1063.76 | .... | 1063.10 | .... | 1069.06 | .... | 1071.18 | .... | 1068.14 | .... | 1065.56 | .... | 1064.72 | .... | 1066.10 | .... |
| 5 | 1062.97 | .... | 1063.39 | .... | 1063.20 | .... | 1063.72 | .... | 1063.79 | .... | 1063.12 | .... | 1069.18 | .... | 1071.14 | .... | 1067.85 | .... | 1065.41 | .... | 1065.39 | .... | 1066.20 | .... |
| 6 | 1062.97 | .... | 1063.39 | .... | 1063.18 | .... | 1063.81 | .... | 1063.81 | .... | 1063.12 | .... | 1069.29 | .... | 1071.12 | .... | 1067.22 | .... | 1065.39 | .... | 1065.39 | .... | 1066.24 | .... |
| 7 | 1063.12 | .... | 1063.39 | .... | 1063.16 | .... | 1063.81 | .... | 1063.83 | .... | 1062.10 | .... | 1069.35 | .... | 1071.06 | .... | 1066.64 | .... | 1065.33 | .... | 1065.33 | .... | 1066.43 | .... |
| 8 | 1063.43 | .... | 1063.37 | .... | 1063.14 | .... | 1063.81 | .... | 1063.87 | .... | 1063.14 | .... | 1069.31 | .... | 1071.04 | .... | 1066.31 | .... | 1065.31 | .... | 1065.26 | .... | 1066.41 | .... |
| 9 | 1063.95 | .... | 1063.39 | .... | 1063.14 | .... | 1063.89 | .... | 1063.81 | .... | 1063.22 | .... | 1069.47 | .... | 1071.02 | .... | 1066.16 | .... | 1065.24 | .... | 1065.16 | .... | 1066.39 | .... |
| 10 | 1064.43 | .... | 1063.39 | .... | 1063.14 | .... | 1063.85 | .... | 1063.72 | .... | 1063.20 | .... | 1069.64 | .... | 1070.99 | .... | 1066.06 | .... | 1065.16 | .... | 1065.06 | .... | 1066.06 | .... |
| 11 | 1064.81 | .... | 1063.39 | .... | 1063.14 | .... | 1063.95 | .... | 1063.64 | .... | 1063.22 | .... | 1069.66 | .... | 1070.93 | .... | 1065.97 | .... | 1065.12 | .... | 1064.91 | .... | 1065.68 | .... |
| 12 | 1064.93 | .... | 1063.39 | .... | 1063.16 | .... | 1063.97 | .... | 1063.60 | .... | 1063.41 | .... | 1069.83 | .... | 1070.83 | .... | 1065.91 | .... | 1065.06 | .... | 1064.81 | .... | 1065.33 | .... |
| 13 | 1065.14 | .... | 1063.35 | .... | 1063.24 | .... | 1063.89 | .... | 1063.52 | .... | 1063.81 | .... | 1069.87 | .... | 1070.68 | .... | 1065.81 | .... | 1064.91 | .... | 1064.72 | .... | 1064.97 | .... |
| 14 | 1064.99 | .... | 1063.31 | .... | 1063.33 | .... | 1063.87 | .... | 1063.54 | .... | 1064.39 | .... | 1069.89 | .... | 1070.60 | .... | 1065.72 | .... | 1064.83 | .... | 1064.62 | .... | 1064.83 | .... |
| 15 | 1064.89 | .... | 1063.33 | .... | 1063.35 | .... | 1063.85 | .... | 1063.47 | .... | 1065.47 | .... | 1069.85 | .... | 1070.47 | .... | 1065.64 | .... | 1064.72 | .... | 1064.49 | .... | 1064.56 | .... |
| 16 | 1064.60 | .... | 1063.33 | .... | 1063.33 | .... | 1063.81 | .... | 1063.47 | .... | 1067.06 | .... | 1069.91 | .... | 1070.39 | .... | 1065.56 | .... | 1064.70 | .... | 1064.41 | .... | 1064.47 | .... |
| 17 | 1064.43 | .... | 1063.33 | .... | 1063.31 | .... | 1063.72 | .... | 1063.47 | .... | 1067.72 | .... | 1070.12 | .... | 1070.31 | .... | 1065.47 | .... | 1064.70 | .... | 1064.35 | .... | 1064.43 | .... |
| 18 | 1064.26 | .... | 1063.33 | .... | 1063.33 | .... | 1063.64 | .... | 1063.47 | .... | 1068.31 | .... | 1070.31 | .... | 1070.06 | .... | 1065.56 | .... | 1064.68 | .... | 1064.31 | .... | 1064.41 | .... |
| 19 | 1064.14 | .... | 1063.33 | .... | 1063.31 | .... | 1063.60 | .... | 1063.47 | .... | 1068.39 | .... | 1070.39 | .... | 1069.97 | .... | 1066.33 | .... | 1064.66 | .... | 1064.26 | .... | 1064.37 | .... |
| 20 | 1064.08 | .... | 1063.26 | .... | 1063.39 | .... | 1063.54 | .... | 1063.47 | .... | 1068.64 | .... | 1070.45 | .... | 1069.91 | .... | 1067.14 | .... | 1064.62 | .... | 1064.22 | .... | 1064.35 | .... |
| 21 | 1063.97 | .... | 1063.24 | .... | 1063.47 | .... | 1063.45 | .... | 1063.42 | .... | 1068.79 | .... | 1070.45 | .... | 1069.85 | .... | 1067.41 | .... | 1064.60 | .... | 1064.60 | .... | 1064.33 | .... |
| 22 | 1063.91 | .... | 1063.24 | .... | 1063.54 | .... | 1063.43 | .... | 1063.37 | .... | 1068.39 | .... | 1070.47 | .... | 1069.66 | .... | 1067.33 | .... | 1064.56 | .... | 1065.31 | .... | 1064.33 | .... |
| 23 | 1063.85 | .... | 1063.24 | .... | 1063.56 | .... | 1063.43 | .... | 1063.35 | .... | 1068.06 | .... | 1070.39 | .... | 1069.56 | .... | 1067.24 | .... | 1064.54 | .... | 1065.54 | .... | 1064.31 | .... |
| 24 | 1063.76 | .... | 1063.22 | .... | 1063.60 | .... | 1063.43 | .... | 1063.31 | .... | 1067.97 | .... | 1070.52 | .... | 1069.47 | .... | 1067.02 | .... | 1064.54 | .... | 1065.83 | .... | 1064.29 | .... |
| 25 | 1063.68 | .... | 1063.20 | .... | 1063.64 | .... | 1063.39 | .... | 1063.22 | .... | 1068.20 | .... | 1070.68 | .... | 1069.37 | .... | 1066.85 | .... | 1064.49 | .... | 1065.89 | .... | 1064.29 | .... |
| 26 | 1063.64 | .... | 1063.18 | .... | 1063.70 | .... | 1063.39 | .... | 1063.18 | .... | 1068.31 | .... | 1071.02 | .... | 1069.35 | .... | 1066.66 | .... | 1064.47 | .... | 1065.93 | .... | 1064.26 | .... |
| 27 | 1063.64 | .... | 1063.18 | .... | 1063.72 | .... | 1063.35 | .... | 1063.16 | .... | 1068.54 | .... | 1071.06 | .... | 1069.31 | .... | 1066.41 | .... | 1064.45 | .... | 1065.72 | .... | 1064.24 | .... |
| 28 | 1063.64 | .... | 1063.18 | .... | 1063.76 | .... | 1063.33 | .... | 1063.14 | .... | 1068.60 | .... | 1071.10 | .... | 1069.33 | .... | 1066.26 | .... | 1064.39 | .... | 1065.58 | .... | 1064.31 | .... |
| 29 | 1063.62 | .... | 1063.20 | .... | 1063.79 | .... | 1063.31 | .... | 1063.16 | .... | 1068.47 | .... | 1071.20 | .... | 1069.33 | .... | 1066.20 | .... | 1064.35 | .... | 1065.43 | .... | 1064.31 | .... |
| 30 | 1063.62 | .... | 1063.22 | .... | 1063.81 | .... | ..... | .... | 1063.22 | .... | 1068.72 | .... | 1071.22 | .... | 1069.33 | .... | 1065.97 | .... | 1064.31 | .... | 1065.31 | .... | 1064.33 | .... |
| 31 | ..... | .... | 1063.24 | .... | 1063.84 | .... | ..... | .... | 1063.22 | .... | ..... | .... | 1071.31 | .... | ..... | .... | 1065.85 | .... | 1064.26 | .... | ..... | .... | 1064.35 | .... |

## Wabigoon River at Wabigoon Falls

Location—About 100 feet above Wabigoon Falls, the last fall on the river, and three miles from its junction with the English River, District of Kenora.

Records Available—Discharge measurements from June, 1914, to October, 1915.

Drainage Area—3,120 square miles.

Gauge—Vertical staff with enamelled face screwed to a 5-inch hewn spruce post firmly wedged and braced to the left bank about 200 feet above the metering section. The zero on the gauge (elev. 111.37) is referred to a bench mark (elev. 120.07), consisting of a nail driven in the head of a 4-inch tamarac stump two feet up-stream from the gauge. Another bench mark (elev. 118.51) is painted on a point of rock on the left bank 75 feet below the metering section. The initial point for soundings is on the right bank, the edge of a 5-inch blazed poplar tree, and marked I. P., S. 12° E.

Channel and Control—Straight for about ½ mile above and 100 feet below the station to the falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream is composed of rock, with a few boulders and weeds at the right bank. The current is sluggish at and above the station, but swift just below the section.

Discharge Measurements—Made from canoe and ice with a small Price current meter.

Regulation—The Dryden Timber & Power Company operate a plant at Dryden, Ontario. The power is used for the mill and for lighting the town. This plant runs 24 hours per day with the exception of Sundays and holidays, when it runs 12 hours. Part of the flow is utilized for operating a saw mill on the opposite side of the river.

Accuracy—The station rating curve is fairly well defined.

## Regular Stations

### SOUTH-WESTERN ONTARIO DISTRICT

| River | Location | Drainage Area Sq. Miles | Township | County |
|---|---|---|---|---|
| Ausable | near Arkona | 408 | West Williams | Middlesex |
| Beaver | near Kimberley | 100 | Euphrasia | Grey |
| Bighead | at Meaford | 132 | St. Vincent | " |
| Black | near Washago | 585 | Rama | Ontario |
| Credit | at Cataract Jct | 85 | Caledon | Peel |
| Maitland | at Ben Miller | 950 | Colborne | Huron |
| Nottawasaga | near Nicolston | 416 | Essa | Simcoe |
| Rocky Saugeen | near Markdale | 96 | Glenelg | Grey |
| Saugeen | near Port Elgin | 1,565 | Saugeen | Bruce |
| " | near Walkerton | 895 | Brant | " |
| Sydenham | near Owen Sound | 71 | Derby | Grey |
| Thames, main stream | near Byron | 1,270 | Delaware | Middlesex |
| " north branch | near Fanshaw | 650 | London | " |
| " south branch | near Ealing | 515 | London and Westminster | " |

## Ausable River near Arkona

**Location**—At the highway bridge at Marsh's Mills, about two miles east of the village of Arkona, near lot 22, concession 7, Township of West Williams, County of Middlesex.

**Records Available**—Discharge measurements from May 14th, 1915, to October 31st, 1916. Gauge readings from June 24th, 1915, to October 31st, 1916.

**Drainage Area**—408 square miles.

**Gauge**—Vertical staff gauge 0 to 12 feet on the downstream side of the first pier. The elevation of the zero of the gauge is 0.00 and a B.M. is established on top of the right girder, elevation 23.31.

**Channel and Control**—The discharge measurements are made in the medium fast water between the two rapids. The flow is confined between the abutments at all stages. The stream bed is composed of shale, and will not shift. The channel is straight for 400 yards above and below the section.

**Discharge Measurements**—Made from the bridge, except in low water, when they are made at a wading section 300 feet above the bridge.

**Accuracy**—Discharge measurements have not yet been made covering the range of stage.

**Observer**—Milton Marsh, Arkona P.O.

### Discharge Measurements of Ausable River near Arkona in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 9.... | Yeates, W. .... | 29 | 45 | 1.34 | 1.54 | 60 | ..... |
| 1916 | | | | | | | ..... |
| Jan. 14.... | " .... | 89 | 416 | 2.23 | 3.42 | 927(a) | ..... |
| Feb. 24.... | " .... | 54 | 151 | .83 | 1.87 | 95 (b) | ..... |
| Mar. 30.... | " .... | 104 | 752 | 7.52 | 6.75 | 5650 (c) | ..... |
| Aug. 24.... | " .... | 39 | 57 | 1.68 | 1.73 | 96(d) | ..... |

(a) Slush at low-water section; control clear.
(b) Ice and slush on control; section clear.
(c) Control clear; co-efficient used to reduce observed velocities.
(d) Not at regular section.

## Daily Gauge Height and Discharge of Ausable River near Arkona for 1915-6

Drainage Area, 408 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1.44 | 48 | 3.17 | 820 | 2.60 | 475 | 5.71 | 3705 | 1.71 | 62 | 5.42 | 3230 | 2.54 | 442 | 3.79 | 1310 | 1.63 | 88 | 1.25 | 24 | 1.17 | 19 | 1.33 | 32 |
| 2 | 1.38 | 38 | 3.00 | 710 | 4.96 | 2550 | 4.93 | 2505 | 1.71 | 62 | 5.00 | 2600 | 2.50 | 420 | 3.04 | 735 | 1.58 | 76 | 1.25 | 24 | 1.21 | 21 | 1.29 | 27 |
| 3 | 1.44 | 48 | 3.00 | 710 | 5.71 | 3705 | 2.96 | 685 | 1.71 | 62 | 4.25 | 1750 | 2.56 | 453 | 2.75 | 560 | 1.52 | 64 | 1.25 | 24 | 1.21 | 21 | 1.29 | 27 |
| 4 | 1.44 | 48 | 2.87 | 630 | 4.79 | 2350 | 2.46 | 298 | 1.67 | 54 | 3.77 | 1295 | 2.79 | 585 | 2.52 | 432 | 1.50 | 60 | 1.23 | 22 | 1.21 | 21 | 1.29 | 27 |
| 5 | 1.54 | 68 | 2.37 | 352 | 5.79 | 3845 | 2.31 | 244 | 1.67 | 54 | 3.43 | 1000 | 2.83 | 610 | 2.58 | 464 | 1.50 | 60 | 1.23 | 24 | 1.21 | 21 | 1.27 | 26 |
| 6 | 1.54 | 68 | 2.35 | 342 | 7.38 | 7000 | 2.31 | 244 | 1.67 | 54 | 3.21 | 845 | 2.71 | 535 | 2.44 | 387 | 1.50 | 60 | 1.24 | 23 | 1.17 | 19 | 1.25 | 24 |
| 7 | 1.54 | 68 | 2.29 | 316 | 5.04 | 2660 | 2.23 | 212 | 1.75 | 70 | 2.96 | 685 | 2.50 | 420 | 2.44 | 387 | 1.48 | 56 | 1.21 | 21 | 1.26 | 25 | 1.25 | 24 |
| 8 | 1.54 | 68 | 2.29 | 316 | 4.34 | 1840 | 2.27 | 228 | 1.92 | 110 | 2.77 | 570 | 2.52 | 431 | 3.96 | 1460 | 1.46 | 52 | 1.21 | 21 | 1.33 | 32 | 1.25 | 24 |
| 9 | 1.54 | 68 | 2.27 | 308 | 3.39 | 975 | 2.29 | 236 | 1.92 | 110 | 2.62 | 486 | 2.64 | 497 | 3.19 | 830 | 1.42 | 44 | 1.21 | 21 | 1.36 | 35 | 1.23 | 22 |
| 10 | 1.53 | 66 | 2.25 | 300 | 2.56 | 453 | 2.31 | 244 | 1.92 | 110 | 2.52 | 431 | 3.33 | 930 | 2.83 | 610 | 1.39 | 38 | 1.25 | 24 | 1.31 | 29 | 1.19 | 20 |
| 11 | 1.51 | 62 | 2.25 | 300 | 2.39 | 360 | 2.31 | 244 | 1.92 | 110 | 2.45 | 393 | 5.25 | 2980 | 2.96 | 685 | 1.37 | 36 | 1.22 | 22 | 1.25 | 24 | 1.17 | 19 |
| 12 | 1.51 | 62 | 2.27 | 308 | 2.64 | 520 | 2.31 | 244 | 1.87 | 98 | 2.54 | 442 | 4.29 | 1790 | 2.44 | 387 | 1.37 | 36 | 1.23 | 22 | 1.21 | 21 | 1.17 | 19 |
| 13 | 1.51 | 62 | 2.23 | 292 | 4.88 | 2455 | 1.98 | 125 | 1.85 | 92 | 3.02 | 720 | 3.37 | 960 | 2.28 | 312 | 1.37 | 36 | 1.25 | 24 | 1.21 | 21 | 1.29 | 27 |
| 14 | 1.51 | 62 | 2.29 | 316 | 3.13 | 790 | 1.98 | 125 | 1.85 | 92 | 4.42 | 1920 | 2.85 | 620 | 2.17 | 268 | 1.37 | 36 | 1.25 | 24 | 1.21 | 21 | 1.33 | 32 |
| 15 | 1.51 | 62 | 2.31 | 324 | 2.71 | 535 | 1.93 | 112 | 1.88 | 100 | 3.85 | 1365 | 4.83 | 2400 | 2.08 | 232 | 1.37 | 36 | 1.25 | 24 | 1.21 | 21 | 1.33 | 32 |
| 16 | 1.52 | 64 | 2.25 | 300 | 2.56 | 453 | 1.89 | 102 | 1.90 | 105 | 3.46 | 1020 | 4.50 | 2010 | 2.00 | 200 | 1.37 | 36 | 1.21 | 21 | 1.21 | 21 | 1.31 | 29 |
| 17 | 1.52 | 64 | 2.19 | 276 | 2.39 | 360 | 1.94 | 115 | 1.92 | 110 | 3.29 | 905 | 3.92 | 1430 | 2.29 | 316 | 1.37 | 36 | 1.21 | 21 | 1.21 | 21 | 1.25 | 24 |
| 18 | 1.52 | 64 | 2.27 | 308 | 2.23 | 292 | 1.92 | 110 | 1.92 | 110 | 3.29 | 905 | 3.60 | 1140 | 2.50 | 420 | 1.33 | 32 | 1.21 | 21 | 1.21 | 21 | 1.33 | 32 |
| 19 | 1.73 | 112 | 2.98 | 700 | 2.42 | 376 | 1.94 | 115 | 1.92 | 110 | 3.21 | 845 | 3.31 | 915 | 2.50 | 420 | 1.33 | 32 | 1.27 | 26 | 1.21 | 21 | 1.33 | 32 |
| 20 | 3.00 | 710 | 3.06 | 745 | 2.29 | 316 | 1.91 | 108 | 1.92 | 110 | 2.98 | 700 | 3.46 | 1020 | 2.46 | 398 | 1.33 | 32 | 1.30 | 28 | 1.21 | 21 | 1.62 | 85 |
| 21 | 3.00 | 710 | 2.81 | 595 | 2.38 | 356 | 1.92 | 110 | 1.87 | 98 | 3.04 | 735 | 3.19 | 835 | 2.29 | 316 | 1.31 | 29 | 1.25 | 24 | 1.21 | 21 | 1.89 | 157 |
| 22 | 2.83 | 610 | 2.98 | 700 | 4.71 | 2250 | 1.90 | 105 | 1.85 | 92 | 3.44 | 1010 | 3.00 | 710 | 2.12 | 248 | 1.31 | 29 | 1.33 | 32 | 1.21 | 21 | 1.62 | 85 |
| 23 | 2.62 | 486 | 2.89 | 645 | 5.96 | 4130 | 1.88 | 100 | 1.83 | 88 | 3.44 | 1010 | 4.17 | 1670 | 1.96 | 184 | 1.29 | 27 | 2.00 | 200 | 1.21 | 21 | 1.50 | 60 |
| 24 | 2.54 | 442 | 3.06 | 745 | 5.21 | 2915 | 1.85 | 92 | 1.75 | 70 | 3.21 | 845 | 3.46 | 1020 | 1.87 | 151 | 1.27 | 26 | 1.71 | 108 | 1.21 | 21 | 1.44 | 48 |
| 25 | 2.31 | 324 | 3.23 | 860 | 4.38 | 1880 | 1.85 | 92 | 1.80 | 80 | 2.96 | 685 | 2.83 | 610 | 2.04 | 216 | 1.25 | 24 | 1.46 | 52 | 1.21 | 21 | 1.33 | 32 |
| 26 | 2.25 | 300 | 3.10 | 770 | 3.46 | 1020 | 1.83 | 88 | 2.42 | 375 | 2.85 | 620 | 2.54 | 442 | 2.06 | 224 | 1.44 | 18 | 1.32 | 32 | 1.21 | 21 | 1.33 | 32 |
| 27 | 2.37 | 352 | 3.06 | 745 | 3.34 | 940 | 1.79 | 78 | 5.17 | 2855 | 2.92 | 660 | 2.37 | 352 | 1.89 | 157 | 1.50 | 60 | 1.31 | 29 | 1.21 | 21 | 1.33 | 32 |
| 28 | 3.17 | 820 | 2.98 | 700 | 5.71 | 3705 | 1.71 | 62 | 7.58 | 7420 | 3.25 | 875 | 2.50 | 420 | 1.81 | 133 | 1.38 | 38 | 1.30 | 28 | 1.33 | 32 | 1.33 | 32 |
| 29 | 3.37 | 960 | 2.85 | 620 | 5.21 | 2915 | 1.71 | 62 | 7.83 | 7940 | 3.23 | 860 | 2.73 | 550 | 1.69 | 102 | 1.31 | 29 | 1.25 | 24 | 1.33 | 32 | 1.33 | 32 |
| 30 | 3.71 | 1240 | 2.89 | 645 | 3.96 | 1465 | ..... | .... | 6.71 | 5590 | 2.83 | 610 | 4.92 | 2500 | 1.67 | 98 | 1.27 | 26 | 1.25 | 24 | 1.33 | 32 | 1.33 | 32 |
| 31 | .... | .... | 2.81 | 595 | 6.38 | 4920 | ..... | .... | 5.75 | 3775 | ..... | ..... | 4.73 | 2280 | ..... | .... | 1.27 | 26 | 1.21 | 21 | ..... | .... | 1.33 | 32 |

## Monthly Discharge of Ausable River near Arkona for 1915-6

Drainage Area 408 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 1,240 | 38 | 272 | 3.06 | .09 | .67 | .75 |
| December .... | 860 | 276 | 525 | 2.11 | .68 | 1.29 | 1.49 |
| January ..(1916) | 7,000 | 292 | 1,900 | 17.16 | .72 | 4.65 | 5.36 |
| February ..... | 3,705 | 62 | 372 | 9.08 | .15 | .91 | .98 |
| March ..... | 7,940 | 54 | 975 | 19.46 | .13 | 2.38 | 2.74 |
| April ..... | 3,230 | 393 | 1,000 | 7.92 | .96 | 2.45 | 2.73 |
| May ..... | 2,980 | 352 | 1,030 | 7.30 | .86 | 2.53 | 2.92 |
| June ..... | 1,460 | 98 | 422 | 3.58 | .24 | 1.03 | 1.15 |
| July..... | 88 | 26 | 42 | .22 | .06 | .10 | .12 |
| August..... | 200 | 21 | 33 | .49 | .05 | .08 | .09 |
| September..... | 35 | 19 | 23 | .09 | .05 | .05 | .06 |
| October ..... | 157 | 19 | 37 | .38 | .05 | .09 | .10 |
| The year ..... | 7,940 | 19 | 555 | 19.46 | .05 | 1.36 | 18.51 |

## Beaver River near Kimberley

Location—At Hill's Bridge, about 2 miles above Kimberley, on the south half of lot 2, concession 5, Township of Euphrasia, County of Grey.

Records Available—Discharge measurements at Weber's Bridge September, 1914, to January, 1915. Discharge measurements and daily gauge heights April 25, 1915, to October 31, 1916, at Hill's Bridge.

Drainage Area—100 square miles.

Gauge—Vertical staff 0 to 6 feet on tree on left bank 20 feet downstream from bridge. Zero on gauge is 0.00.

Channel and Control—Channel straight above and below for a distance of 200 feet. The banks and control are permanent under ordinary conditions. The bed is composed of stones and gravel, one channel existing at all stages.

Discharge Measurements—Made from the bridge during the high-water period, and from a permanent wading section located 20 feet above the bridge for the low-water stages.

Regulation—The Hydro-Electric Power Commission's power plant located three-quarters of a mile upstream, though a twenty-four hour power, has a marked effect on the river stage at this section.

Accuracy—The rating curve is fairly well defined, but open-water estimates are subject to errors, due to fluctuations in stage caused by operation of power plant.

Observer—A. Hill, Kimberley, P.O.

### Discharge Measurements of Beaver River near Kimberley in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Dec. 8.... | Cunnington, G... | 56 | 40 | 2.05 | .96 | 83 | ..... |
| 1916 | | | | | | | |
| Jan. 14.... | " .. | 58 | 66 | 1.94 | 1.37 | 128 | ..... |
| Feb. 8.... | Roberts, E. .... | 57 | 90 | 2.19 | 1.92 | 197 (a) | ..... |
| " 9.... | " .... | 57 | 93 | 2.40 | 2.00 | 223 (a) | ..... |
| " 24.... | Cunnington, G... | 56 | 73 | 2.50 | 1.75 | 184 (a) | ..... |
| June 13.. | Roberts, E. .... | 57 | 62 | 2.18 | 1.39 | 135 | ... ..... |
| Oct. 4.... | Yeates, W. .... | 57 | 22 | 1.74 | .62 | 38 | ..... |

(a) Ice at island above section diverting current to left bank.

## Daily Gauge Height and Discharge of Beaver River near Kimberley for 1915-6

Drainage Area, 100 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 0.83 | 57 | 1.08 | 87 | 1.81 | 206 | 1.96 | 237 | 2.29 | 311 | 3.21 | 520 | 1.87 | 218 | 1.46 | 144 | 0.92 | 67 | 0.71 | 45 | 0.71 | 45 | 0.58 | 33 |
| 2 | 0.85 | 59 | 1.04 | 82 | 1.64 | 174 | 2.04 | 254 | 1.96 | 237 | 2.87 | 444 | 1.96 | 237 | 1.46 | 144 | 0.92 | 67 | 0.71 | 45 | 0.67 | 41 | 0.62 | 37 |
| 3 | 0.96 | 71 | 1.08 | 87 | 1.42 | 137 | 2.08 | 263 | 2.42 | 341 | 2.83 | 435 | 1.92 | 228 | 1.46 | 144 | 0.92 | 67 | 0.71 | 45 | 0.67 | 41 | 0.62 | 37 |
| 4 | 1.08 | 87 | 1.08 | 87 | 1.54 | 157 | 2.04 | 254 | 2.21 | 292 | 2.62 | 387 | 2.00 | 245 | 1.42 | 137 | 1.00 | 77 | 0.71 | 45 | 0.67 | 41 | 0.60 | 35 |
| 5 | 0.83 | 57 | 1.06 | 84 | 2.08 | 263 | 2.19 | 288 | 2.00 | 245 | 2.46 | 350 | 2.04 | 254 | 1.50 | 150 | 1.00 | 77 | 0.71 | 45 | 0.67 | 41 | 0.67 | 41 |
| 6 | 0.81 | 55 | 1.04 | 82 | 1.92 | 228 | 1.71 | 187 | 2.17 | 283 | 2.37 | 329 | 2.00 | 245 | 1.46 | 144 | 0.96 | 72 | 0.67 | 41 | 0.62 | 37 | 0.62 | 37 |
| 7 | 0.79 | 53 | 1.08 | 87 | 1.92 | 228 | 1.48 | 147 | 2.08 | 263 | 2.25 | 302 | 1.92 | 228 | 1.42 | 137 | 0.92 | 67 | 0.67 | 41 | 0.62 | 37 | ..... | 37 |
| 8 | 0.79 | 53 | 1.12 | 93 | 2.33 | 320 | 1.92 | 196 | 1.75 | 195 | 2.17 | 283 | 1.96 | 237 | 1.42 | 137 | 0.96 | 72 | 0.75 | 49 | 0.64 | 39 | ..... | 37 |
| 9 | 0.81 | 55 | 1.08 | 87 | 2.75 | 416 | 2.00 | 224 | 1.83 | 210 | 2.08 | 263 | 1.96 | 237 | 1.46 | 144 | 0.83 | 57 | 0.75 | 49 | 0.58 | 33 | ..... | 37 |
| 10 | 0.77 | 51 | 1.25 | 112 | 2.08 | 262 | 2.00 | 224 | 1.75 | 195 | 2.04 | 254 | 1.83 | 210 | 1.50 | 150 | 0.83 | 57 | 0.75 | 49 | 0.56 | 31 | 0.71 | 45 |
| 11 | 0.75 | 49 | 1.25 | 112 | 1.33 | 124 | 2.31 | 290 | 1.92 | 228 | 2.12 | 272 | 1.75 | 195 | 1.46 | 144 | 0.92 | 67 | 0.71 | 45 | 0.60 | 35 | 0.81 | 55 |
| 12 | 0.81 | 55 | 0.83 | 57 | 1.56 | 160 | 2.37 | 290 | 1.75 | 195 | 2.17 | 283 | 1.75 | 195 | 1.46 | 144 | 0.92 | 67 | 0.71 | 45 | 0.62 | 37 | ..... | 55 |
| 13 | 0.75 | 49 | 0.79 | 53 | 1.46 | 144 | 2.17 | 283 | 1.67 | 180 | 2.33 | 320 | 1.67 | 180 | 1.42 | 137 | 0.87 | 61 | 0.71 | 45 | 0.62 | 37 | 0.87 | 61 |
| 14 | 0.77 | 51 | 0.85 | 59 | 1.54 | 157 | 2.71 | 382 | 1.42 | 137 | 2.87 | 444 | 1.58 | 164 | 1.42 | 137 | 0.87 | 61 | 0.71 | 45 | 0.64 | 39 | 0.83 | 57 |
| 15 | 0.75 | 49 | 0.87 | 62 | 1.85 | 214 | 3.33 | 508 | 1.77 | 198 | 2.54 | 368 | 1.67 | 180 | 1.46 | 144 | 0.87 | 61 | 0.71 | 45 | 0.67 | 41 | 0.75 | 49 |
| 16 | 0.75 | 49 | 0.83 | 57 | 1.92 | 228 | 3.25 | 474 | 1.67 | 180 | 2.33 | 320 | 1.75 | 195 | 1.54 | 157 | 0.79 | 53 | 0.71 | 45 | 0.62 | 37 | 0.79 | 53 |
| 17 | 0.79 | 53 | 0.83 | 57 | 2.08 | 263 | 2.21 | 292 | 1.67 | 180 | 2.42 | 341 | 1.83 | 210 | 1.64 | 174 | 0.75 | 49 | 0.71 | 45 | 0.58 | 33 | 0.96 | 72 |
| 18 | 0.79 | 53 | 0.85 | 59 | 2.17 | 283 | 1.83 | 210 | 1.71 | 187 | 2.37 | 329 | 1.75 | 195 | 1.54 | 157 | 0.83 | 57 | 0.71 | 45 | 0.58 | 33 | 0.79 | 53 |
| 19 | 1.00 | 77 | 0.89 | 64 | 2.58 | 377 | 1.92 | 220 | 1.50 | 150 | 2.25 | 302 | 1.62 | 171 | 1.50 | 150 | 0.83 | 57 | 0.71 | 45 | 0.69 | 43 | 0.96 | 72 |
| 20 | 1.08 | 87 | 0.87 | 62 | 2.54 | 368 | 2.17 | 224 | 1.42 | 137 | 2.42 | 341 | 1.58 | 164 | 1.42 | 137 | 0.83 | 57 | 0.71 | 45 | 0.69 | 43 | 0.87 | 61 |
| 21 | 1.00 | 77 | 0.94 | 70 | 2.19 | 288 | 2.54 | 302 | 1.21 | 106 | 2.29 | 311 | 1.54 | 157 | 1.42 | 137 | 0.83 | 57 | 0.71 | 45 | 0.69 | 43 | 0.79 | 53 |
| 22 | 1.00 | 77 | 0.89 | 64 | 3.00 | 474 | 2.92 | 375 | 1.12 | 93 | 2.87 | 444 | 1.54 | 157 | 1.33 | 124 | 0.83 | 57 | 0.71 | 45 | 0.67 | 41 | 0.67 | 41 |
| 23 | 1.00 | 77 | 0.83 | 57 | 1.75 | 195 | 2.12 | 185 | 1.29 | 118 | 2.50 | 359 | 1.56 | 160 | 1.21 | 105 | 0.75 | 49 | 0.71 | 45 | 0.60 | 35 | 0.79 | 53 |
| 24 | 1.00 | 77 | 0.83 | 57 | 1.92 | 228 | 1.71 | 187 | 1.37 | 130 | 2.37 | 329 | 1.50 | 150 | 1.17 | 100 | 0.75 | 49 | 0.71 | 45 | 0.60 | 35 | 0.83 | 57 |
| 25 | 1.04 | 82 | 0.83 | 57 | 1.83 | 210 | 1.71 | 187 | 1.04 | 82 | 2.21 | 292 | 1.50 | 150 | 1.04 | 82 | 0.75 | 49 | 0.71 | 45 | 9.62 | 37 | 0.96 | 72 |
| 26 | 1.19 | 103 | 0.79 | 53 | 2.04 | 254 | 1.75 | 195 | 1.21 | 106 | 2.17 | 283 | 1.42 | 137 | 1.00 | 77 | 0.75 | 49 | 0.71 | 45 | 0.67 | 41 | 0.92 | 67 |
| 27 | 1.33 | 124 | 0.85 | 59 | 2.46 | 350 | 1.73 | 191 | 1.50 | 150 | 2.08 | 263 | 1.75 | 195 | 1.12 | 93 | 0.75 | 49 | 0.71 | 45 | 0.67 | 41 | 0.83 | 57 |
| 28 | 1.21 | 106 | 1.39 | 132 | 2.71 | 407 | 2.12 | 272 | 1.62 | 171 | 2.08 | 263 | 1.62 | 171 | 1.04 | 82 | 0.75 | 49 | 0.71 | 45 | 0.75 | 49 | 0.83 | 57 |
| 29 | 1.27 | 115 | 0.85 | 59 | 2.21 | 292 | 2.17 | 283 | 2.29 | 311 | 2.04 | 254 | 1.50 | 150 | 0.96 | 72 | 0.71 | 45 | 0.71 | 45 | 0.75 | 49 | 0.79 | 53 |
| 30 | 1.21 | 106 | 0.92 | 67 | 2.00 | 245 | ..... | ..... | 2.29 | 311 | 1.83 | 210 | 1.50 | 150 | 1.00 | 77 | 0.71 | 45 | 0.71 | 45 | 0.67 | 41 | 0.92 | 67 |
| 31 | ..... | ..... | 0.87 | 62 | 2.50 | 359 | ..... | ..... | 2.83 | 435 | ..... | ..... | 1.50 | 150 | ..... | .... | 0.71 | 45 | 0.71 | 45 | ..... | ..... | 0.81 | 55 |

## Monthly Discharge of Beaver River near Kimberley for 1915-6

Drainage Area, 100 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile. | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 124 | 49 | 70 | 1.24 | .49 | .70 | .78 |
| December " | 132 | 53 | 73 | 1.32 | .53 | .73 | .84 |
| January .. (1916) | 474 | 124 | 258 | 4.74 | 1.24 | 2.58 | 2.97 |
| February ..... | 508 | 147 | 263 | 5.08 | 1.47 | 2.63 | 2.84 |
| Mareh ..... | 435 | 82 | 206 | 4.35 | .82 | 2.06 | 2.37 |
| April ..... | 520 | 210 | 330 | 5.20 | 2.10 | 3.30 | 3.68 |
| May ..... | 254 | 137 | 191 | 2.54 | 1.37 | 1.91 | 2.20 |
| June ..... | 174 | 72 | 129 | 1.74 | .72 | 1.29 | 1.44 |
| July ..... | 77 | 45 | 58 | .77 | .45 | .58 | .67 |
| August ..... | 49 | 41 | 45 | .49 | .41 | .45 | .52 |
| September ..... | 49 | 31 | 39 | .49 | .31 | .39 | .44 |
| October ..... | 72 | 33 | 51 | .72 | .33 | .51 | .59 |
| The year ..... | 520 | 31 | 142 | 5.20 | .31 | 1.42 | 19.33 |

## Bighead River at Meaford

Location—At the Georgian Bay Milling & Power Co. grist mill bridge outside of the Town of Meaford, near lot 15, concession 5, Township of St. Vincent, County of Grey.

Records Available—Discharge measurements and daily gauge heights from June 10, 1915, to Oct. 31, 1916.

Drainage Area—132 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment. Elevation of zero on gauge is 0.00.

Channel and Control—The channel is straight for 100 feet above and 500 feet below the gauging station. The bed of the stream is composed of stones and gravel, and is shifting. During the freshet stage, banks and control are not stationary. During a freshet in January, 1916, the stream scoured badly, completely changing the rating curve.

Discharge Measurements—Made at the bridge, also at a wading station 100 feet downstream.

Regulation—Low-water flow is controlled by the Georgian Bay Milling & Power Co.'s dam located four miles upstream. As the plant is usually run for 24 hours each day, except Sunday, the fluctuations will not be great.

Accuracy—The rating curve has not yet been well defined for new conditions.

Observer—Wilbert Baker, Meaford.

### Discharge Measurements of Bighead River at Meaford in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Dec. 10.... | Cunnington, G... | 29 | 33 | 2.00 | 2.04 | 66 | ..... |
| 1916 | | | | | | | |
| Jan. 21.... | " " | 45 | 110 | 1.23 | 3.29 | 135 (a) | ..... |
| Feb. 11.... | Roberts, E..... | 65 | 76 | 2.68 | 2.56 | 205 (b) | ..... |
| June. 11.... | " " | 95 | 77 | 1.98 | 1.83 | 152 (c) | ..... |
| Oct. 4.... | Yeates, W..... | 13 | 7 | .87 | .96 | 6 | ..... |
| " 4.... | " " | 43 | 29 | .20 | .96 | 6 | ..... |

(a) Reading not taken at regular section; river jammed; ice on control.
(b) Section badly scoured.
(c) Section completely scoured; control washed out.

## Daily Gauge Height and Discharge of Bighead River at Meaford for 1915-6

**Discharge Area 132 Square Miles**

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 2.08 | 99 | 2.54 | 191 | 2.46 | 76 | 2.69 | 194 | 2.33 | 184 | 5.77 | 630 | 2.44 | 198 | 2.00 | 141 | 1.67 | 98 | 1.35 | 56 | 1.23 | 41 | 0.62 | 0 |
| 2 | 1.75 | 47 | 2.64 | 211 | 3.17 | 190 | 2.17 | 163 | 2.33 | 184 | 5.19 | 555 | 2.60 | 219 | 2.00 | 141 | 1.62 | 92 | 1.33 | 54 | 1.27 | 46 | 1.27 | 46 |
| 3 | 2.02 | 88 | 2.60 | 203 | 3.29 | 190 | 2.17 | 163 | 2.33 | 184 | 3.42 | 326 | 2.58 | 216 | 1.94 | 133 | 1.62 | 92 | 1.33 | 54 | 1.25 | 43 | 1.25 | 43 |
| 4 | 1.94 | 74 | 2.58 | 199 | 2.92 | 187 | 2.10 | 154 | 2.33 | 184 | 3.25 | 303 | 2.50 | 206 | 1.92 | 131 | 1.67 | 98 | 1.27 | 46 | 1.25 | 43 | 0.67 | 0 |
| 5 | 2.00 | 84 | 2.50 | 183 | 3.79 | 241 | 2.48 | 203 | 2.29 | 179 | 3.14 | 289 | 2.39 | 192 | 1.89 | 127 | 1.60 | 89 | 1.25 | 43 | 1.25 | 43 | 0.69 | 0 |
| 6 | 2.08 | 99 | 2.52 | 187 | 3.87 | 285 | 2.75 | 239 | 2.25 | 172 | 2.83 | 249 | 2.33 | 184 | 1.83 | 119 | 1.58 | 86 | 1.23 | 41 | 1.23 | 41 | 1.31 | 51 |
| 7 | 2.00 | 84 | 2.46 | 175 | 3.23 | 241 | 2.58 | 216 | 2.27 | 176 | 2.83 | 249 | 2.33 | 184 | 1.79 | 114 | 1.52 | 79 | 1.27 | 46 | 1.19 | 36 | 1.25 | 43 |
| 8 | 2.00 | 84 | 2.37 | 157 | 3.04 | 167 | 2.42 | 196 | 2.17 | 163 | 2.58 | 216 | 2.17 | 163 | 1.75 | 108 | 1.50 | 76 | 1.35 | 56 | 0.92 | 1 | 0.67 | 0 |
| 9 | 2.00 | 84 | 2.37 | 157 | 3.25 | 194 | 2.42 | 196 | 2.27 | 176 | 2.56 | 214 | 2.19 | 166 | 1.73 | 106 | 1.50 | 76 | 1.33 | 54 | 1.17 | 33 | 1.23 | 41 |
| 10 | 2.00 | 84 | 2.27 | 121 | 3.25 | 212 | 2.52 | 209 | 2.25 | 172 | 2.96 | 201 | 2.17 | 163 | 1.75 | 108 | 1.50 | 76 | 1.33 | 54 | 0.83 | 1 | 0.67 | 0 |
| 11 | 2.06 | 85 | 2.33 | 103 | 3.67 | 249 | 2.50 | 206 | 2.35 | 186 | 2.52 | 209 | 2.17 | 163 | 1.83 | 119 | 1.42 | 66 | 1.31 | 51 | 1.19 | 36 | 1.27 | 46 |
| 12 | 2.10 | 103 | 2.42 | 121 | 3.08 | 149 | 2.50 | 206 | 2.42 | 196 | 2.94 | 263 | 2.10 | 154 | 1.74 | 107 | 1.44 | 68 | 1.27 | 46 | 1.17 | 33 | 1.29 | 49 |
| 13 | 2.00 | 84 | 2.54 | 140 | 3.75 | 258 | 2.50 | 206 | 2.37 | 189 | 3.00 | 271 | 2.08 | 151 | 1.75 | 108 | 1.35 | 55 | 1.27 | 46 | 1.17 | 33 | 1.50 | 76 |
| 14 | 2.08 | 99 | 2.54 | 140 | 3.25 | 212 | 2.64 | 224 | 2.33 | 184 | 3.54 | 341 | 2.08 | 151 | 1.75 | 108 | 1.33 | 54 | 1.27 | 46 | 1.12 | 27 | 1.56 | 84 |
| 15 | 2.08 | 99 | 2.58 | 158 | 3.00 | 131 | 2.75 | 239 | 2.25 | 172 | 3.25 | 303 | 2.00 | 141 | 1.73 | 106 | 1.33 | 54 | 1.25 | 43 | 1.14 | 29 | 1.58 | 86 |
| 16 | 2.14 | 111 | 2.54 | 140 | 3.00 | 140 | 2.75 | 239 | 2.35 | 186 | 3.00 | 271 | 2.00 | 141 | 2.14 | 159 | 1.33 | 54 | 1.25 | 43 | 1.12 | 27 | 1.75 | 108 |
| 17 | 2.27 | 137 | 2.56 | 140 | 3.08 | 140 | 2.64 | 224 | 2.33 | 184 | 2.98 | 268 | 2.00 | 141 | 2.87 | 254 | 1.33 | 54 | 1.25 | 43 | 0.67 | 0 | 1.85 | 121 |
| 18 | 2.17 | 117 | 2.54 | 140 | 3.08 | 140 | 2.50 | 206 | 2.33 | 184 | 2.81 | 246 | 2.00 | 141 | 3.04 | 276 | 1.33 | 54 | 1.29 | 49 | 1.19 | 36 | 1.75 | 108 |
| 19 | 2.21 | 125 | 2.50 | 121 | 3.06 | 140 | 2.33 | 184 | 2.33 | 184 | 2.35 | 186 | 1.96 | 136 | 2.89 | 257 | 1.33 | 54 | 1.25 | 43 | 1.17 | 33 | 1.77 | 111 |
| 20 | 2.56 | 195 | 2.50 | 121 | 3.04 | 140 | 2.33 | 184 | 2.33 | 184 | 2.77 | 241 | 1.92 | 131 | 2.65 | 231 | 1.42 | 66 | 1.25 | 43 | 1.25 | 43 | 1.73 | 106 |
| 21 | 2.46 | 175 | 2.50 | 121 | 3.29 | 140 | 2.46 | 201 | 2.29 | 179 | 3.17 | 293 | 1.92 | 131 | 2.56 | 214 | 1.37 | 59 | 1.25 | 43 | 1.25 | 43 | 1.67 | 98 |
| 22 | 2.48 | 179 | 2.50 | 103 | 5.87 | 613 | 2.67 | 228 | 2.25 | 172 | 4.25 | 432 | 1.92 | 131 | 2.48 | 203 | 1.33 | 54 | 1.23 | 41 | 1.27 | 46 | 1.64 | 94 |
| 23 | 2.44 | 171 | 2.37 | 94 | 3.17 | 121 | 2.60 | 219 | 2.33 | 184 | 4.50 | 466 | 1.87 | 124 | 2.33 | 184 | 1.33 | 54 | 1.19 | 36 | 1.25 | 43 | 1.58 | 86 |
| 24 | 2.46 | 175 | 2.52 | 121 | 2.92 | 85 | 2.50 | 206 | 2.35 | 186 | 4.00 | 401 | 1.83 | 119 | 2.08 | 151 | 1.31 | 51 | 1.17 | 33 | 0.69 | 0 | 1.50 | 76 |
| 25 | 2.46 | 175 | 2.54 | 121 | 2.87 | 67 | 2.35 | 186 | 2.37 | 189 | 3.77 | 371 | 1.83 | 119 | 2.00 | 141 | 1.27 | 46 | 1.27 | 46 | 1.27 | 46 | 1.50 | 76 |
| 26 | 2.46 | 175 | 2.54 | 130 | 2.96 | 103 | 2.33 | 184 | 2.37 | 189 | 2.87 | 254 | 1.83 | 119 | 1.94 | 133 | 1.25 | 43 | 1.25 | 43 | 1.27 | 46 | 1.46 | 71 |
| 27 | 2.25 | 133 | 2.56 | 132 | 3.08 | 131 | 2.33 | 184 | 3.31 | 311 | 2.50 | 206 | 1.83 | 119 | 1.79 | 114 | 1.25 | 43 | 1.25 | 43 | 1.25 | 43 | 1.42 | 66 |
| 28 | 2.42 | 167 | 2.56 | 136 | 3.37 | 158 | 2.37 | 189 | 6.25 | 693 | 2.25 | 172 | 2.58 | 216 | 1.73 | 106 | 1.25 | 43 | 1.25 | 43 | 1.25 | 43 | 1.42 | 66 |
| 29 | 2.50 | 183 | 2.64 | 140 | 3.19 | 167 | 2.33 | 184 | 4.92 | 520 | 2.25 | 172 | 2.29 | 179 | 1.67 | 98 | 1.25 | 43 | 1.25 | 43 | 1.29 | 49 | 1.42 | 66 |
| 30 | 2.54 | 191 | 2.87 | 149 | 3.00 | 185 | ..... | ..... | 4.75 | 498 | 2.25 | 172 | 2.06 | 149 | 1.67 | 98 | 1.25 | 43 | 1.25 | 43 | 1.25 | 43 | 1.52 | 79 |
| 31 | ..... | ..... | 3.00 | 158 | 3.29 | 190 | ..... | ..... | 4.79 | 505 | ..... | ..... | 2.00 | 141 | ..... | ..... | 1.39 | 62 | 1.23 | 41 | ..... | ..... | 1.50 | 76 |

## Monthly Discharge of Bighead River at Meaford for 1915-6

Drainage Area, 132 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 195 | 47 | 124 | 1.48 | .36 | .94 | 1.05 |
| December. " | 211 | 94 | 146 | 1.60 | .71 | 1.11 | 1.28 |
| January.. (1916) | 285 | 67 | 182 | 2.16 | .51 | 1.38 | 1.59 |
| February ..... | 239 | 154 | 201 | 1.81 | 1.17 | 1.52 | 1.64 |
| March ..... | 693 | 163 | 234 | 5.25 | 1.23 | 1.77 | 2.04 |
| April..... | 630 | 172 | 292 | 4.77 | 1.30 | 2.21 | 2.47 |
| May..... | 219 | 119 | 158 | 1.66 | .90 | 1.20 | 1.38 |
| June ..... | 276 | 98 | 146 | 2.09 | .74 | 1.11 | 1.24 |
| July..... | 98 | 43 | 64 | .74 | .33 | .48 | .55 |
| August ..... | 56. | 33 | 46 | .42 | .25 | .35 | .40 |
| September ..... | 49 | 0 | 34 | .37 | .00 | .26 | .29 |
| October..... | 121 | 0 | 64 | .92 | .00 | .48 | .55 |
| The year..... ... | 693 | 0 | 140 | 5.25 | .00 | 1.06 | 14.43 |

## Black River near Washago

**Location**—At the highway bridge known as Kennedy's Bridge, about 5 miles south-east of the Town of Washago, on lot 1, concession G, Township of Rama, County of Ontario.

**Records Available**—Discharge measurements at first bridge from August, 1913, to January, 1914. Discharge measurements at Kennedy's Bridge from February, 1914, and daily gauge heights from May 5, 1915, to October 31, 1916.

**Drainage Area**—585 square miles.

**Gauge**—Vertical staff 0 to 12 feet on tree on left bank. Elevation of zero is 19.00, which is referred to a B.M. (elevation 30.00) on tie rod on downstream side of bridge, latter used for water elevations since gauge went out in spring of 1916.

**Channel and Control**—The channel is straight for 150 feet above and 700 feet below the gauging section. The banks and control can be considered permanent, as the velocity here is never very high. The bed of the stream is composed of rock.

**Discharge Measurements**—Made from the bridge and wading section 50 feet below.

**Winter Flow**—Owing to the somewhat sluggish flow at this section, ice from December to March forms to a great thickness, and relation of gauge height to discharge is seriously affected during that period. Measurements are made to determine the winter flow.

**Regulation**—The flow at this section during May, June and July is controlled to a large extent by logging dams above. The operation of gates at these dams causes fluctuations in gauge heights, amounting to several feet at the gauge. At times logs lodge below section, causing considerable backwater.

**Accuracy**—For three months in the early summer the river stage is subject to large fluctuations, and the accuracy of the discharge depends upon accuracy of mean daily gauge heights. Rating curve not well defined at all stages.

**Observer**—John Carrick, Washago.

### Discharge Measurements of Black River near Washago in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 1 | Roberts, E. | 119 | 492 | .65 | 21.67 | 322 | ..... |
| 1916 | | | | | | | |
| Jan. 20 | Cunniugton, G. | 119 | 459 | 1.09 | 22.73 | 486 (a) | ..... |
| Feb. 22 | " | 119 | 632 | 1.39 | 24.00 | 883 (b) | ..... |
| Oct. 3 | Yeates, W. | 31 | 43 | 1.09 | 19.80 | 47 (c) | ..... |

(a) Ice measurement.
(b) Ice-covered above and below section; small ice jam below.
(c) Measurement made at wading section.

# Daily Gauge Height and Discharge of Black River near Washago, for 1915-6

Drainage Area 585 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 21.69 | 327 | 23.10 | 850 | 22.46 | 375 | 26.77 | 2770 | 23.64 | 720 | 28.63 | 4740 | 25.71 | 2550 | 24.50 | 1660 | 21.79 | 357 | 20.67 | 107 | 19.79 | 46 | 19.92 | 51 |
| 2 | 21.64 | 312 | 23.10 | 850 | 22.46 | 360 | 26.85 | 2640 | 23.58 | 700 | 28.88 | 4930 | 25.56 | 2440 | 23.90 | 1260 | 21.73 | 339 | 20.54 | 94 | 19.81 | 46 | 19.90 | 50 |
| 3 | 21.62 | 306 | 22.98 | 790 | 22.42 | 369 | 26.73 | 2760 | 23.56 | 690 | 28.77 | 4850 | 25.62 | 2480 | 23.50 | 1050 | 21.75 | 345 | 20.63 | 103 | 19.86 | 48 | 19.88 | 49 |
| 4 | 21.60 | 300 | 22.81 | 615 | 24.42 | 375 | 26.73 | 2760 | 23.48 | 690 | 28.65 | 4760 | 25.56 | 2440 | 23.40 | 1000 | 21.79 | 357 | 20.54 | 94 | 19.86 | 48 | 19.83 | 47 |
| 5 | 21.69 | 327 | 23.08 | 675 | 22.42 | 390 | 26.48 | 2540 | 28.42 | 690 | 28.50 | 4640 | 25.58 | 2450 | 23.29 | 945 | 21.94 | 402 | 20.56 | 96 | 19.81 | 46 | 19.79 | 46 |
| 6 | 21.79 | 357 | 23.00 | 620 | 22.46 | 390 | 26.08 | 2240 | 23.39 | 690 | 27.73 | 4070 | 26.14 | 2870 | 23.40 | 1000 | 21.98 | 414 | 20.54 | 94 | 19.83 | 47 | 19.73 | 43 |
| 7 | 21.83 | 369 | 22.83 | 590 | 22.52 | 405 | 25.71 | 1970 | 23.33 | 670 | 27.48 | 3880 | 25.54 | 2420 | 23.36 | 980 | 21.81 | 363 | 20.56 | 96 | 20.00 | 56 | 19.71 | 42 |
| 8 | 21.87 | 381 | 22.71 | 550 | 22.58 | 411 | 25.56 | 1800 | 23.37 | 700 | 27.31 | 3750 | 25.75 | 2580 | 23.23 | 910 | 21.75 | 345 | 20.58 | 98 | 19.98 | 53 | 19.71 | 42 |
| 9 | 21.77 | 351 | 22.62 | 510 | 22.58 | 417 | 25.37 | 1650 | 23.37 | 700 | 27.13 | 3620 | 25.75 | 2580 | 23.08 | 835 | 21.58 | 295 | 20.63 | 103 | 19.87 | 49 | 19.79 | 46 |
| 10 | 21.71 | 333 | 22.75 | 510 | 22.60 | 450 | 25.21 | 1590 | 22.33 | 690 | 26.90 | 3440 | 25.67 | 2520 | 23.17 | 885 | 21.56 | 290 | 20.54 | 94 | 19.83 | 47 | 19.79 | 46 |
| 11 | 21.69 | 327 | 22.83 | 530 | 22.62 | 453 | 24.98 | 1400 | 23.44 | 710 | 26.65 | 3260 | 25.64 | 2500 | 23.11 | 850 | 21.48 | 270 | 20.52 | 92 | 19.77 | 45 | 19.73 | 43 |
| 12 | 21.69 | 327 | 22.94 | 520 | 22.69 | 459 | 24.87 | 1380 | 23.44 | 720 | 26.71 | 3300 | 24.60 | 1730 | 23.00 | 800 | 21.37 | 243 | 20.63 | 103 | 19.75 | 44 | 19.71 | 42 |
| 13 | 21.69 | 327 | 22.92 | 510 | 22.71 | 483 | 24.77 | 1280 | 23.46 | 730 | 26.63 | 3240 | 24.04 | 1340 | 22.94 | 770 | 21.44 | 260 | 20.63 | 103 | 19.73 | 43 | 19.73 | 43 |
| 14 | 21.71 | 333 | 22.83 | 497 | 22.71 | 480 | 24.67 | 1200 | 23.46 | 730 | 26.63 | 3240 | 23.92 | 1270 | 22.83 | 720 | 21.50 | 270 | 20.63 | 103 | 19.73 | 43 | 19.90 | 50 |
| 15 | 21.67 | 321 | 22.79 | 480 | 22.73 | 480 | 24.52 | 1150 | 23.39 | 700 | 27.42 | 3840 | 24.06 | 1360 | 22.75 | 690 | 21.44 | 260 | 20.50 | 90 | 19.69 | 42 | 20.13 | 62 |
| 16 | 22.62 | 306 | 22.77 | 450 | 22.75 | 480 | 24.37 | 1110 | 23.35 | 700 | 27.73 | 4070 | 23.98 | 1310 | 22.71 | 675 | 21.40 | 250 | 20.48 | 88 | 19.73 | 43 | 20.19 | 65 |
| 17 | 21.58 | 294 | 22.75 | 450 | 22.71 | 480 | 24.25 | 1050 | 23.33 | 690 | 27.71 | 4050 | 24.17 | 1430 | 22.65 | 650 | 21.33 | 232 | 20.44 | 85 | 19.77 | 45 | 20.60 | 100 |
| 18 | 21.50 | 270 | 22.67 | 429 | 22.75 | 486 | 24.17 | 1000 | 32.31 | 690 | 27.75 | 4080 | 24.12 | 1390 | 22.65 | 650 | 21.31 | 228 | 20.35 | 76 | 19.77 | 45 | 20.94 | 141 |
| 19 | 21.44 | 255 | 22.60 | 420 | 22.81 | 510 | 24.17 | 1000 | 23.25 | 670 | 27.71 | 4050 | 24.14 | 1410 | 22.67 | 660 | 21.29 | 222 | 20.67 | 107 | 19.69 | 42 | 21.08 | 170 |
| 20 | 21.67 | 321 | 22.56 | 399 | 22.77 | 485 | 24.14 | 980 | 23.21 | 600 | 27.54 | 3920 | 24.12 | 1390 | 22.50 | 595 | 21.25 | 212 | 20.98 | 147 | 19.69 | 42 | 21.87 | 381 |
| 21 | 21.96 | 408 | 22.56 | 390 | 22.81 | 510 | 24.08 | 950 | 23.17 | 590 | 27.29 | 3740 | 24.12 | 1390 | 22.42 | 565 | 21.08 | 170 | 20.87 | 130 | 19.71 | 42 | 22.90 | 755 |
| 22 | 22.10 | 450 | 22.46 | 390 | 23.10 | 550 | 23.98 | 875 | 23.17 | 580 | 27.50 | 3900 | 23.90 | 1260 | 22.31 | 530 | 21.08 | 170 | 20.77 | 117 | 19.67 | 41 | 23.08 | 835 |
| 23 | 22.21 | 483 | 22.48 | 390 | 23.79 | 900 | 23.87 | 840 | 23.25 | 580 | 27.87 | 4170 | 24.17 | 1430 | 22.25 | 505 | 21.08 | 170 | 20.64 | 104 | 19.75 | 44 | 22.96 | 780 |
| 24 | 22.19 | 477 | 22.50 | 390 | 24.21 | 1100 | 23.71 | 775 | 23.23 | 630 | 27.87 | 4170 | 24.29 | 1510 | 22.15 | 470 | 21.06 | 165 | 20.48 | 88 | 19.75 | 44 | 22.67 | 665 |
| 25 | 22.14 | 462 | 22.50 | 390 | 24.35 | 1230 | 23.67 | 775 | 23.21 | 670 | 27.63 | 3990 | 24.12 | 1390 | 22.12 | 463 | 21.02 | 156 | 20.42 | 83 | 19.73 | 43 | 22.50 | 590 |
| 26 | 22.29 | 505 | 22.44 | 390 | 24.50 | 1320 | 23.67 | 780 | 23.29 | 710 | 27.42 | 3840 | 24.19 | 1440 | 22.04 | 432 | 21.00 | 150 | 20.36 | 77 | 19.75 | 44 | 22.46 | 585 |
| 27 | 22.44 | 565 | 22.42 | 381 | 24.89 | 1520 | 23.69 | 790 | 23.48 | 925 | 27.15 | 3630 | 24.25 | 1480 | 21.98 | 414 | 21.02 | 155 | 20.25 | 69 | 19.79 | 46 | 22.42 | 560 |
| 28 | 22.73 | 680 | 22.44 | 369 | 26.08 | 2170 | 23.71 | 800 | 24.12 | 1390 | 26.83 | 3390 | 24.25 | 1480 | 22.00 | 420 | 21.08 | 170 | 20.00 | 54 | 19.75 | 44 | 22.52 | 600 |
| 29 | 22.92 | 760 | 22.46 | 366 | 26.50 | 2540 | 23.67 | 720 | 24.87 | 1920 | 26.40 | 3070 | 24.40 | 1590 | 21.98 | 414 | 21.06 | 165 | 19.87 | 49 | 19.87 | 49 | 22.52 | 605 |
| 30 | 23.02 | 810 | 22.46 | 360 | 26.64 | 2720 | ..... | ..... | 26.32 | 3010 | 26.10 | 2840 | 24.67 | 1780 | 21.92 | 396 | 20.96 | 144 | 19.83 | 47 | 19.90 | 50 | 22.56 | 610 |
| 31 | ..... | ..... | 22.46 | 369 | 26.56 | 2640 | ..... | ..... | 27.75 | 4080 | ..... | ..... | 24.73 | 1820 | ..... | ..... | 20.73 | 113 | 19.79 | 46 | ..... | ..... | 22.52 | 600 |

## Monthly Discharge of Black River near Washago for 1915-6

Drainage Area, 585 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November. (1915) | 810 | 255 | 401 | 1.38 | .44 | .69 | .77 |
| December " | 850 | 360 | 501 | 1.45 | .62 | .86 | .99 |
| January .. (1916) | 2,720 | 360 | 837 | 4.65 | .62 | 1.43 | 1.65 |
| February ..... | 2,840 | 720 | 1,440 | 4.85 | 1.23 | 2.46 | 2.65 |
| March ..... | 4,080 | 580 | 934 | 6.97 | .99 | 1.60 | 1.84 |
| April ..... | 4,930 | 2,840 | 3,882 | 8.43 | 4.85 | 6.64 | 7.41 |
| May ..... | 2,870 | 1,260 | 1,840 | 4.91 | 2.15 | 3.15 | 3.63 |
| June..... | 1,660 | 396 | 740 | 2.84 | .68 | 1.26 | 1.41 |
| July ..... | 414 | 113 | 248 | .71 | .19 | .42 | .48 |
| August ..... | 147 | 46 | 92 | .25 | .08 | .16 | .18 |
| September ..... | 54 | 41 | 46 | .09 | .07 | .08 | .09 |
| October..... | 835 | 42 | 282 | 1.43 | .07 | .48 | .55 |
| The year..... | 4,930 | 41 | 931 | 8.43 | .07 | 1.59 | 21.64 |

## Credit River at Cataract Junction

**Location**—About 500 feet from C.P.R. station at Cataract Junction, lot 14, concession 3, Township of Caledon, County of Peel.

**Records Available**—Discharge measurements from June, 1912, to October 31st, 1916. Daily gauge heights from May 7, 1915, to October 31, 1916.

**Drainage Area**—85 square miles.

**Gauge**—Vertical staff 0 to 6 feet on tree on right bank. Zero on gauge (elevation 8.00) is referred to a B.M. (elevation 10.00) painted on rock 100 feet downstream from metering section.

**Channel and Control**—The channel is straight for about 350 feet above and 300 feet below the section. The right bank is low, and overflows during high stages. The bed is composed of gravel, which is shifting during flood stages.

**Discharge Measurements**—Made at permanent wading section at all stages.

**Winter Flow**—The ice, unless jammed, has but little effect at this section. The open channel curve can be used with a fair degree of accuracy.

**Regulation**—The dam at Erin, about four miles upstream, causes serious fluctuations in the river stage at this section. Semi-daily gauge readings will not give a representative mean.

**Accuracy**—A fairly well-defined rating curve has been established for this station. The accuracy of the estimates of discharge depends upon the accuracy of the mean daily gauge heights.

**Observer**—Alfred Riches, Cataract Junction.

### Discharge Measurements of Credit River at Cataract Junction in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| Jan. 7.... | Roberts, E. .... | 41 | 53 | 1.80 | 9.32 | 96 (a) | ..... |
| " 27.... | " .... | 41 | 51 | 3.30 | 9.46 | 169 (b) | ..... |
| Feb. 19.... | " .... | 45 | 55 | 1.06 | 9.25 | 58 (c) | ..... |

(a) Slush ice on control.
(b) Thin ice on river below section.
(c) Heavy ice; slush ice on control.

## Daily Gauge Height and Discharge of Credit River at Cataract Junction for 1915-6

Drainage Area 85 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 8.70 | 41 | 8.73 | 46 | 9.23 | 59 | 9.52 | 117 | 9.67 | 151 | 11.12 | 940 | 8.88 | 74 | 8.84 | 65 | 8.71 | 43 | 8.57 | 24 | 8.55 | 22 | 8.60 | 27 |
| 2 | 8.66 | 35 | 8.71 | 43 | 8.81 | 59 | 9.94 | 270 | 9.35 | 67 | 10.54 | 705 | 9.04 | 114 | 8.79 | 55 | 8.67 | 37 | 8.59 | 26 | 8.47 | 16 | 8.57 | 24 |
| 3 | 8.67 | 37 | 8.73 | 46 | 8.87 | 72 | 10.12 | 330 | 9.73 | 170 | 9.94 | 466 | 9.00 | 102 | 8.79 | 55 | 8.69 | 40 | 8.55 | 22 | 8.50 | 18 | 8.56 | 23 |
| 4 | 8.66 | 35 | 8.72 | 44 | 8.89 | 76 | 10.00 | 290 | 9.14 | 27 | 9.59 | 326 | 9.03 | 111 | 8.81 | 59 | 8.69 | 40 | 8.60 | 27 | 8.54 | 22 | 8.50 | 18 |
| 5 | 8.67 | 37 | 8.68 | 38 | 8.81 | 59 | 10.04 | 306 | 9.12 | 26 | 9.27 | 198 | 8.96 | 92 | 8.83 | 63 | 8.63 | 31 | 8.58 | 25 | 8.49 | 17 | 8.61 | 28 |
| 6 | 8.72 | 44 | 8.71 | 43 | 9.02 | 83 | 9.67 | 151 | 9.39 | 72 | 9.25 | 190 | 8.87 | 72 | 8.78 | 54 | 8.64 | 33 | 8.50 | 18 | 8.47 | 16 | 8.57 | 24 |
| 7 | 8.64 | 33 | 8.69 | 40 | 9.42 | 95 | 9.34 | 59 | 9.39 | 72 | 9.12 | 140 | 8.89 | 76 | 8.76 | 51 | 8.60 | 27 | 8.51 | 19 | 8.50 | 18 | 8.55 | 22 |
| 8 | 8.72 | 44 | 8.69 | 40 | 10.02 | 330 | 9.49 | 102 | 9.44 | 78 | 8.96 | 92 | 8.83 | 63 | 8.81 | 59 | 8.62 | 30 | 8.56 | 23 | 8.50 | 18 | 8.50 | 18 |
| 9 | 8.72 | 44 | 8.69 | 40 | 10.19 | 390 | 9.51 | 114 | 9.44 | 78 | 8.92 | 83 | 8.84 | 65 | 8.80 | 57 | 8.60 | 27 | 8.57 | 24 | 8.50 | 18 | 8.57 | 24 |
| 10 | 8.64 | 33 | 8.73 | 46 | 9.03 | 27 | 9.39 | 78 | 9.54 | 102 | 8.95 | 90 | 8.80 | 57 | 8.84 | 65 | 8.65 | 34 | 8.56 | 23 | 8.47 | 16 | 8.59 | 26 |
| 11 | 8.62 | 30 | 8.76 | 51 | 8.81 | 12 | 9.57 | 117 | 9.31 | 57 | 8.96 | 92 | 8.93 | 85 | 8.96 | 92 | 8.64 | 33 | 8.54 | 22 | 8.50 | 18 | 8.58 | 25 |
| 12 | 8.63 | 31 | 8.67 | 37 | 9.14 | 27 | 9.69 | 151 | 9.27 | 49 | 9.02 | 108 | 8.89 | 76 | 9.05 | 117 | 8.52 | 20 | 8.50 | 18 | 8.51 | 19 | 8.53 | 21 |
| 13 | 8.71 | 43 | 8.69 | 40 | 8.94 | 14 | 9.87 | 230 | 9.10 | 31 | 9.22 | 178 | 8.78 | 54 | 9.00 | 102 | 8.58 | 25 | 8.50 | 18 | 8.52 | 20 | 8.59 | 26 |
| 14 | 8.64 | 33 | 8.79 | 55 | 9.34 | 67 | 10.07 | 306 | 8.75 | 10 | 9.85 | 430 | 8.79 | 55 | 8.87 | 72 | 8.62 | 30 | 8.55 | 22 | 8.54 | 22 | 8.56 | 23 |
| 15 | 8.71 | 43 | 8.85 | 67 | 9.60 | 123 | 9.87 | 230 | 9.04 | 22 | 9.85 | 430 | 8.86 | 70 | 8.87 | 72 | 8.60 | 27 | 8.56 | 23 | 8.52 | 20 | 8.52 | 20 |
| 16 | 8.64 | 33 | 8.67 | 37 | 9.64 | 132 | 9.46 | 90 | 9.17 | 46 | 9.29 | 206 | 8.93 | 85 | 9.04 | 114 | 8.53 | 21 | 8.55 | 22 | 8.50 | 18 | 8.62 | 30 |
| 17 | 8.58 | 25 | 8.60 | 27 | 9.74 | 170 | 9.72 | 170 | 9.14 | 37 | 9.44 | 266 | 8.95 | 90 | 9.07 | 123 | 8.59 | 26 | 8.55 | 22 | 8.47 | 16 | 8.60 | 27 |
| 18 | 8.54 | 22 | 8.67 | 37 | 9.75 | 182 | 8.87 | 14 | 9.83 | 49 | 9.36 | 234 | 8.88 | 74 | 8.99 | 100 | 8.60 | 27 | 8.55 | 22 | 8.44 | 13 | 8.58 | 25 |
| 19 | 8.81 | 59 | 8.67 | 37 | 9.75 | 182 | 9.39 | 57 | 9.29 | 30 | 9.10 | 132 | 8.80 | 57 | 8.92 | 83 | 8.60 | 27 | 8.48 | 16 | 8.56 | 23 | 8.62 | 30 |
| 20 | 9.90 | 450 | 8.79 | 55 | 9.69 | 159 | 9.37 | 210 | 9.12 | 30 | 9.25 | 190 | 8.78 | 54 | 8.83 | 63 | 8.60 | 27 | 8.47 | 16 | 8.55 | 23 | 8.87 | 71 |
| 21 | 8.87 | 72 | 8.88 | 74 | 9.56 | 126 | 9.83 | 108 | 8.67 | 37 | 9.28 | 202 | 8.77 | 52 | 8.83 | 63 | 8.84 | 65 | 8.67 | 37 | 8.51 | 19 | 8.96 | 92 |
| 22 | 8.81 | 59 | 9.12 | 140 | 10.19 | 390 | 9.55 | 90 | 8.67 | 37 | 10.06 | 515 | 8.83 | 63 | 8.77 | 52 | 8.79 | 55 | 8.55 | 22 | 8.47 | 16 | 8.83 | 63 |
| 23 | 8.77 | 52 | 8.71 | 43 | 9.50 | 143 | 9.44 | 12 | 8.93 | 85 | 9.89 | 446 | 8.98 | 97 | 8.75 | 49 | 8.63 | 31 | 8.58 | 25 | 8.53 | 22 | 8.72 | 44 |
| 24 | 8.71 | 43 | 8.64 | 33 | 9.70 | 170 | 8.85 | 12 | 8.94 | 88 | 9.37 | 238 | 8.92 | 83 | 8.85 | 68 | 8.64 | 33 | 8.55 | 22 | 8.47 | 16 | 8.71 | 43 |
| 25 | 8.69 | 40 | 8.77 | 52 | 9.31 | 80 | 8.85 | 14 | 8.71 | 43 | 9.35 | 230 | 8.80 | 57 | 8.94 | 88 | 8.62 | 30 | 8.59 | 26 | 8.47 | 16 | 8.61 | 28 |
| 26 | 8.78 | 54 | 9.19 | 166 | 9.29 | 78 | 8.87 | 22 | 8.96 | 92 | 9.50 | 290 | 8.75 | 49 | 8.82 | 61 | 8.61 | 28 | 8.56 | 23 | 8.50 | 18 | 8.59 | 26 |
| 27 | 8.78 | 54 | 8.98 | 37 | 9.62 | 170 | 9.04 | 51 | 8.89 | 76 | 9.27 | 198 | 8.82 | 61 | 8.71 | 43 | 8.61 | 28 | 8.47 | 16 | 8.55 | 23 | 8.62 | 30 |
| 28 | 8.95 | 90 | 8.67 | 44 | 10.08 | 310 | 9.29 | 47 | 9.58 | 322 | 9.19 | 166 | 8.93 | 85 | 8.75 | 49 | 8.57 | 24 | 8.55 | 22 | 8.50 | 18 | 8.60 | 27 |
| 29 | 8.90 | 78 | 9.27 | 49 | 9.64 | 159 | 9.27 | 47 | 10.52 | 700 | 9.00 | 102 | 8.88 | 74 | 8.69 | 40 | 8.53 | 21 | 8.59 | 26 | 8.59 | 26 | 8.62 | 30 |
| 30 | 8.84 | 65 | 9.67 | 54 | 9.56 | 140 | ..... | ..... | 11.58 | 1120 | 8.96 | 92 | 9.06 | 120 | 8.71 | 43 | 8.53 | 21 | 8.56 | 23 | 8.58 | 25 | 8.73 | 46 |
| 31 | ..... | ..... | 9.74 | 54 | 10.58 | 470 | ..... | ..... | 11.29 | 1010 | ..... | ..... | 9.02 | 108 | ..... | ..... | 8.59 | 24 | 8.54 | 22 | ..... | ..... | 8.64 | 33 |

## Monthly Discharge of Credit River at Cataract Junction for 1915-6

Drainage Area, 85 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 450 | 22 | 59 | 5.29 | .26 | .69 | .77 |
| December . " | 166 | 27 | 52 | 1.95 | .32 | .61 | .70 |
| January .. (1916) | 470 | 12 | 147 | 5.53 | .14 | 1.73 | 1.99 |
| February ..... | 330 | 12 | 131 | 3.88 | .14 | 1.54 | 1.66 |
| March ..... | 1,120 | 10 | 155 | 13.18 | .12 | 1.82 | 2.10 |
| April ..... | 940 | 83 | 266 | 11.06 | .98 | 3.13 | 3.49 |
| May ..... | 120 | 49 | 77 | 1.41 | .58 | .91 | 1.05 |
| June..... | 123 | 40 | 69 | 1.45 | .47 | .81 | .90 |
| July ..... | 43 | 20 | 31 | .51 | .24 | .36 | .42 |
| August ..... | 37 | 16 | 22 | .44 | .19 | .26 | .30 |
| September ..... | 26 | 13 | 19 | .31 | .15 | .22 | .25 |
| October ..... | 92 | 18 | 32 | 1.08 | .21 | .38 | .44 |
| The year ..... | 1,120 | 10 | 88 | 13.18 | .12 | 1.04 | 14.16 |

## Maitland River at Ben Miller

**Location**—At the highway bridge in the Village of Ben Miller, five miles south-west of the Town of Goderich, Township of Colborne, County of Huron.

**Records Available**—Discharge measurements from May, 1911, to Feb., 1915. Daily gauge heights from June 1st, 1911, to Oct. 31st, 1916.

**Drainage Area**—950 square miles.

**Gauge**—Vertical steel staff gauge with enamelled face graduated in feet and inches and located on the downstream side of the first pier from the left abutment. The zero on the gauge (elev. 12.00) is referred to a bench mark (elev. 29.07) painted on the downstream side of the right wing wall.

**Channel and Control**—The channel is straight for 300 feet above and ¼ mile below the section. Both banks are low, clean and liable to overflow at high stages. The control is permanent during all stages, being composed of limestone.

**Discharge Measurements**—Made from the bridge at ordinary and high stages, and at a permanent wading section during the low water period.

**Winter Flow**—Ice greatly affects relation of gauge height to discharge. The section being wide and shallow, ice frequently freezes to the bottom, rendering meter measurements impossible.

**Accuracy**—For the low water a well-defined rating curve has been established.

**Observer**—E. Pfrimmer, Ben Miller P.O.

## Daily Gauge Height and Discharge of Maitland River at Ben Miller for 1915-6

Drainage Area, 950 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 13.62 | 348 | 15.08 | 3060 | 14.83 | 1880 | 16.50 | 7850 | 14.00 | 780 | 17.25 | 11800 | 14.67 | 2050 | 14.33 | 1290 | 13.58 | 313 | 13.25 | 125 | 13.12 | 94 | 13.21 | 113 |
| 2 | 13.62 | 348 | 15.17 | 3300 | 15.00 | 2220 | 15.58 | 4510 | 14.25 | 1150 | 17.00 | 10300 | 14.67 | 2050 | 14.21 | 1090 | 13.58 | 313 | 13.25 | 125 | 13.08 | 87 | 13.17 | 104 |
| 3 | 13.62 | 348 | 15.33 | 3750 | 15.21 | 2550 | 15.25 | 3520 | 14.21 | 1090 | 16.33 | 7180 | 14.75 | 2220 | 14.08 | 890 | 13.54 | 279 | 13.21 | 113 | 13.08 | 87 | 13.12 | 94 |
| 4 | 13.62 | 348 | 15.17 | 3300 | 15.29 | 2800 | 14.83 | 2420 | 14.08 | 890 | 15.83 | 5340 | 14.92 | 2650 | 14.00 | 780 | 13.50 | 245 | 13.25 | 125 | 13.08 | 87 | 13.12 | 94 |
| 5 | 13.62 | 348 | 15.00 | 2850 | 17.25 | 6680 | 14.50 | 1640 | 14.00 | 780 | 15.54 | 4380 | 14.75 | 2220 | 14.25 | 1150 | 13.46 | 121 | 13.21 | 113 | 13.12 | 94 | 13.12 | 94 |
| 6 | 13.62 | 348 | 14.92 | 2650 | 16.67 | 5950 | 14.33 | 1290 | 14.00 | 780 | 15.25 | 3520 | 14.58 | 1830 | 14.33 | 1290 | 13.46 | 221 | 13.17 | 104 | 13.12 | 94 | 13.12 | 94 |
| 7 | 13.58 | 313 | 14.75 | 2220 | 16.17 | 4570 | 14.00 | 780 | 13.92 | 670 | 15.04 | 2950 | 14.58 | 1830 | 14.33 | 1290 | 13.42 | 197 | 13.17 | 104 | 13.12 | 94 | 13.12 | 94 |
| 8 | 13.58 | 313 | 14.50 | 1640 | 15.83 | 3950 | 14.25 | 780 | 13.83 | 555 | 14.83 | 2420 | 14.58 | 1830 | 14.25 | 1150 | 13.37 | 172 | 13.21 | 113 | 13.17 | 104 | 13.12 | 94 |
| 9 | 13.58 | 313 | 14.33 | 1290 | 15.25 | 2850 | 14.71 | 780 | 13.83 | 555 | 14.75 | 2220 | 14.67 | 2050 | 14.23 | 1120 | 13.37 | 172 | 13.19 | 108 | 13.17 | 104 | 13.12 | 94 |
| 10 | 13.58 | 313 | 14.21 | 1090 | 15.08 | 2800 | 14.50 | 890 | 13.79 | 510 | 14.67 | 2050 | 14.75 | 2220 | 14.33 | 1290 | 13.33 | 154 | 13.27 | 131 | 13.12 | 94 | 13.12 | 94 |
| 11 | 13.58 | 313 | 14.12 | 950 | 15.00 | 2680 | 14.33 | 1000 | 13.75 | 470 | 14.62 | 1930 | 14.92 | 2650 | 14.25 | 1150 | 13.33 | 154 | 13.21 | 113 | 13.12 | 94 | 13.12 | 94 |
| 12 | 13.58 | 313 | 14.04 | 735 | 14.92 | 2650 | 14.50 | 1070 | 13.83 | 555 | 14.58 | 1830 | 14.75 | 2220 | 14.25 | 1150 | 13.29 | 137 | 13.17 | 104 | 13.08 | 87 | 13.08 | 87 |
| 13 | 13.58 | 313 | 14.00 | 780 | 14.75 | 2220 | 14.75 | 1070 | 13.92 | 670 | 15.21 | 3410 | 14.48 | 1600 | 14.17 | 1020 | 13.33 | 154 | 13.17 | 104 | 13.08 | 87 | 13.33 | 154 |
| 14 | 13.56 | 296 | 13.96 | 725 | 14.67 | 2050 | 15.00 | 1070 | 13.92 | 670 | 15.50 | 4250 | 14.25 | 1150 | 14.08 | 890 | 13.33 | 154 | 13.17 | 104 | 13.04 | 83 | 13.29 | 137 |
| 15 | 13.56 | 296 | 13.96 | 725 | 14.58 | 1830 | 15.17 | 1070 | 13.79 | 510 | 16.00 | 5950 | 14.25 | 1150 | 14.08 | 890 | 13.33 | 154 | 13.17 | 104 | 13.04 | 83 | 13.25 | 125 |
| 16 | 13.56 | 296 | 13.96 | 725 | 14.50 | 1640 | 14.92 | 1070 | 13.96 | 725 | 16.33 | 7180 | 14.42 | 1460 | 14.08 | 890 | 13.33 | 154 | 13.12 | 94 | 13.04 | 83 | 13.29 | 137 |
| 17 | 13.54 | 279 | 14.21 | 1090 | 14.42 | 1460 | 14.50 | 1070 | 14.00 | 780 | 15.92 | 5660 | 14.50 | 1640 | 14.92 | 2650 | 13.25 | 125 | 13.10 | 90 | 13.08 | 87 | 13.37 | 172 |
| 18 | 13.58 | 313 | 14.42 | 1460 | 14.42 | 1460 | 14.17 | 1070 | 13.96 | 725 | 15.58 | 4510 | 14.50 | 1640 | 14.58 | 1830 | 13.33 | 154 | 13.08 | 87 | 13.08 | 87 | 13.46 | 221 |
| 19 | 14.00 | 780 | 14.37 | 1360 | 14.33 | 1290 | 14.04 | 835 | 13.92 | 670 | 15.25 | 3520 | 14.50 | 1640 | 14.50 | 1640 | 13.33 | 154 | 13.23 | 119 | 13.12 | 94 | 13.50 | 245 |
| 20 | 14.83 | 2420 | 14.37 | 1360 | 14.33 | 1290 | 14.29 | 1210 | 13.83 | 555 | 15.25 | 3520 | 14.42 | 1460 | 14.33 | 1290 | 13.33 | 154 | 13.19 | 108 | 13.12 | 94 | 13.50 | 245 |
| 21 | 14.92 | 2650 | 14.33 | 1290 | 16.37 | 7330 | 14.17 | 1020 | 13.83 | 555 | 15.25 | 3520 | 14.33 | 1290 | 14.29 | 1210 | 13.42 | 197 | 13.12 | 94 | 13.12 | 94 | 13.46 | 221 |
| 22 | 14.79 | 2320 | 14.33 | 1290 | 16.83 | 9340 | 14.12 | 950 | 13.79 | 510 | 15.42 | 4010 | 14.23 | 1120 | 14.17 | 1020 | 13.50 | 245 | 13.08 | 87 | 13.12 | 94 | 13.46 | 221 |
| 23 | 14.75 | 2220 | 14.46 | 1550 | 15.92 | 5660 | 14.21 | 1090 | 13.79 | 510 | 15.67 | 4800 | 14.23 | 1120 | 13.92 | 670 | 13.50 | 245 | 12.08 | 87 | 13.14 | 98 | 13.46 | 221 |
| 24 | 14.50 | 1640 | 14.54 | 1740 | 15.57 | 5070 | 14.08 | 890 | 13.75 | 470 | 15.33 | 3750 | 14.17 | 1020 | 13.83 | 555 | 13.42 | 197 | 13.04 | 81 | 13.14 | 98 | 13.46 | 221 |
| 25 | 14.42 | 1460 | 14.52 | 1690 | 15.83 | 5340 | 14.04 | 835 | 13.75 | 470 | 14.92 | 2650 | 14.12 | 950 | 13.79 | 510 | 13.35 | 162 | 13.08 | 87 | 13.14 | 98 | 13.42 | 197 |
| 26 | 14.58 | 1830 | 14.71 | 2120 | 15.83 | 5340 | 14.00 | 780 | 13.83 | 555 | 15.08 | 3060 | 14.08 | 890 | 13.67 | 393 | 13.35 | 162 | 13.12 | 94 | 13.14 | 98 | 13.42 | 197 |
| 27 | 14.83 | 2420 | 14.83 | 1830 | 15.92 | 5660 | 13.79 | 510 | 14.50 | 1640 | 15.25 | 3520 | 14.04 | 835 | 13.67 | 393 | 13.35 | 162 | 13.12 | 94 | 13.14 | 98 | 13.39 | 180 |
| 28 | 15.29 | 3630 | 14.92 | 1880 | 17.33 | 12280 | 13.71 | 430 | 15.50 | 4250 | 15.75 | 5070 | 13.96 | 725 | 13.62 | 348 | 13.33 | 154 | 13.12 | 94 | 13.21 | 113 | 13.39 | 180 |
| 29 | 15.42 | 4010 | 14.87 | 1880 | 16.33 | 7180 | 13.83 | 555 | 17.75 | 14800 | 15.08 | 3060 | 14.08 | 890 | 13.62 | 348 | 13.33 | 154 | 13.12 | 94 | 13.25 | 125 | 13.39 | 180 |
| 30 | 15.17 | 3300 | 14.83 | 1880 | 15.58 | 4510 | ..... | .... | 19.33 | 29690 | 14.67 | 2050 | 14.25 | 1150 | 13.58 | 313 | 13.29 | 137 | 13.12 | 94 | 13.25 | 125 | 13.33 | 154 |
| 31 | ..... | .... | 14.83 | 1880 | 16.00 | 5950 | ..... | .... | 18.25 | 18620 | ..... | ..... | 14.42 | 1460 | ..... | ..... | 13.29 | 137 | 13.12 | 94 | ..... | ..... | 13.33 | 154 |

## Monthly Discharge of Maitland River at Ben Miller for 1915-6

Drainage Area 950 Square Miles

| Month | Discharge in Second-feet. | | | Discharge in Second-feet per Square Mile. | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 4,010 | 279 | 1,148 | 4.22 | .29 | 1.21 | 1.35 |
| December. " | 3,750 | 725 | 1,745 | 3.95 | .76 | 1.84 | 2.12 |
| January ..(1916) | 12,280 | 1,290 | 4,145 | 12.93 | 1.36 | 4.36 | 5.03 |
| February ..... | 7,850 | 430 | 1,450 | 8.26 | .45 | 1.53 | 1.65 |
| March ..... | 29,690 | 470 | 2,779 | 31.25 | .49 | 2.93 | 3.38 |
| April ..... | 11,800 | 1,830 | 4,314 | 12.42 | 1.93 | 4.54 | 5.06 |
| May ..... | 2,650 | 725 | 1,581 | 2.79 | .76 | 1.66 | 1.91 |
| June..... | 2,650 | 313 | 1,017 | 2.79 | .33 | 1.07 | 1.19 |
| July ..... | 313 | 125 | 185 | .33 | .13 | .19 | .22 |
| August ..... | 131 | 81 | 103 | .14 | .09 | .11 | .13 |
| September ..... | 125 | 83 | 95 | .13 | .09 | .10 | .11 |
| October ..... | 245 | 87 | 152 | .26 | .09 | .16 | .18 |
| The year..... | 29,690 | 81 | 1,559 | 31.25 | .09 | 1.64 | 22.32 |

## Nottawasaga River near Nicolston

**Location**—At McLean's Bridge, 4 miles north of the Town of Nicolston, near lot 5, concession 6, Township of Essa, County of Simcoe.

**Records Available**—Discharge measurements from June, 1912, to Feb., 1916. Daily gauge heights, from August 18, 1914, to October 31, 1916.

**Drainage Area**—416 square miles.

**Gauge**—Vertical staff 0 to 12 feet on right abutment, upstream side. Zero on the gauge (elevation 4.00) is referred to B.M. (elevation 20.00) on tension rod of bridge 60 feet from initial point for soundings.

**Channel and Control**—The channel below the section is straight for about 600 feet. Above the section it is straight for about 100 feet, when it takes a sharp turn to the right, causing an angle at the bridge. Both banks and control are subject to change under high-water conditions.

**Discharge Measurements**—Made from the bridge at all stages.

**Winter Flow**—The relation of gauge height to discharge is affected by ice during the winter months and measurements are made to compute the winter flow.

**Regulation**—The dams above have little effect this section.

**Accuracy**—These records, with the reduction made for the angle at section, can be considered good up to discharges of 800 second feet. There are not sufficient records available to compute discliarges very accurately above gauge height 8.00 feet. The estimate made is probably close to the actual discharge.

**Observer**—John Scott, Egbert P.O.

### Discharge Measurements of Nottawasaga River near Nicolston in 1916

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1916 | | | | | | | |
| Jan. 15.... | Cunnington, G... | 90 | 378 | 1.24 | 7.67 | 468 (a) | ..... |
| Feb. 12.... | Roberts, E..... | 90 | 264 | .89 | 6.46 | 236 (a) | ..... |
| " 23.... | Cunnington, G... | 90 | 264 | .84 | 6.42 | 224 (a) | ..... |

(a) Ice measurement.

## Daily Gauge Height and Discharge of Nottawasaga River near Nicolston for 1915-6

Drainage Area 416 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 5.94 | 178 | 6.58 | 306 | 6.27 | 244 | 13.75 | 2720 | 6.58 | 246 | 17.92 | 4390 | 7.33 | 468 | 7.64 | 545 | 5.87 | 164 | 5.33 | 75 | 5.33 | 75 | 5.54 | 106 |
| 2 | 5.90 | 170 | 6.44 | 278 | 6.67 | 324 | 11.31 | 1740 | 6.54 | 230 | 15.37 | 3370 | 7.62 | 540 | 7.08 | 406 | 5.75 | 140 | 5.35 | 78 | 5.19 | 59 | 5.44 | 91 |
| 3 | 5.94 | 178 | 6.27 | 244 | 7.00 | 390 | 9.42 | 1060 | 6.54 | 230 | 13.27 | 2530 | 7.77 | 580 | 7.02 | 394 | 5.73 | 136 | 5.25 | 65 | 5.10 | 50 | 5.44 | 91 |
| 4 | 5.94 | 178 | 6.04 | 198 | 7.98 | 388 | 8.12 | 665 | 6.50 | 226 | 11.98 | 2010 | 8.39 | 745 | 6.71 | 332 | 5.75 | 140 | 5.23 | 63 | 5.21 | 61 | 5.42 | 88 |
| 5 | 6.14 | 218 | 5.98 | 186 | 7.08 | 406 | 7.56 | 525 | 6.42 | 220 | 10.70 | 1510 | 8.02 | 640 | 6.52 | 294 | 5.58 | 112 | 5.21 | 61 | 5.19 | 59 | 5.54 | 106 |
| 6 | 6.23 | 236 | 6.08 | 206 | 8.29 | 585 | 7.17 | 428 | 6.64 | 250 | 9.27 | 1010 | 7.52 | 515 | 6.46 | 282 | 5.54 | 106 | 5.19 | 59 | 5.31 | 72 | 5.50 | 100 |
| 7 | 6.08 | 206 | 5.92 | 174 | 8.04 | 510 | 6.96 | 382 | 7.04 | 320 | 8.60 | 810 | 7.27 | 453 | 6.27 | 244 | 5.46 | 94 | 5.75 | 140 | 5.31 | 72 | 5.48 | 97 |
| 8 | 6.10 | 210 | 6.14 | 218 | 7.62 | 455 | 6.89 | 368 | 6.85 | 290 | 8.27 | 710 | 7.12 | 415 | 6.17 | 224 | 5.58 | 112 | 5.50 | 100 | 5.27 | 67 | 5.25 | 65 |
| 9 | 6.02 | 194 | 6.10 | 210 | 7.21 | 370 | 6.67 | 240 | 6.69 | 270 | 7.89 | 610 | 7.06 | 402 | 6.17 | 224 | 5.42 | 88 | 5.31 | 72 | 5.25 | 65 | 5.31 | 72 |
| 10 | 6.08 | 206 | 5.92 | 174 | 7.37 | 390 | 6.62 | 242 | 6.73 | 270 | 7.73 | 570 | 6.87 | 364 | 6.23 | 236 | 5.54 | 106 | 5.35 | 78 | 5.23 | 63 | 5.50 | 100 |
| 11 | 5.87 | 164 | 6.02 | 194 | 7.21 | 378 | 6.73 | 260 | 6.75 | 274 | 7.69 | 555 | 7.12 | 415 | 7.71 | 565 | 5.58 | 112 | 5.42 | 88 | 5.37 | 80 | 5.44 | 91 |
| 12 | 6.04 | 198 | 5.87 | 164 | 7.21 | 382 | 6.67 | 240 | 6.71 | 270 | 8.23 | 700 | 6.96 | 382 | 7.96 | 625 | 5.48 | 97 | 5.46 | 94 | 5.25 | 65 | 5.56 | 109 |
| 13 | 6.02 | 194 | 6.21 | 232 | 7.83 | 493 | 6.50 | 210 | 6.79 | 290 | 8.75 | 855 | 6.48 | 286 | 7.37 | 478 | 5.54 | 106 | 5.14 | 54 | 5.31 | 72 | 5.52 | 103 |
| 14 | 5.96 | 182 | 6.04 | 198 | 8.14 | 560 | 6.62 | 230 | 6.85 | 290 | 10.67 | 1500 | 6.27 | 244 | 7.21 | 438 | 5.37 | 80 | 5.08 | 48 | 5.37 | 80 | 5.62 | 118 |
| 15 | 6.00 | 190 | 6.00 | 190 | 7.64 | 472 | 6.60 | 228 | 6.83 | 290 | 12.64 | 2280 | 6.44 | 278 | 6.83 | 357 | 5.29 | 69 | 5.12 | 52 | 5.33 | 75 | 5.54 | 106 |
| 16 | 5.98 | 186 | 6.06 | 202 | 7.48 | 410 | 6.58 | 226 | 6.73 | 270 | 10.89 | 1590 | 6.79 | 348 | 8.37 | 740 | 5.37 | 80 | 5.12 | 52 | 5.39 | 84 | 5.44 | 91 |
| 17 | 6.02 | 194 | 6.25 | 240 | 7.04 | 398 | 6.58 | 226 | 6.67 | 254 | 9.96 | 1250 | 7.02 | 394 | 7.54 | 520 | 5.56 | 109 | 5.12 | 52 | 5.17 | 57 | 5.67 | 96 |
| 18 | 5.90 | 170 | 6.37 | 264 | 6.64 | 318 | 6.58 | 226 | 6.75 | 270 | 9.96 | 1250 | 7.00 | 390 | 7.25 | 448 | 5.46 | 94 | 5.19 | 59 | 5.29 | 69 | 5.81 | 152 |
| 19 | 6.02 | 194 | 6.21 | 232 | 6.46 | 282 | 6.64 | 230 | 6.56 | 254 | 8.89 | 900 | 6.77 | 344 | 6.98 | 386 | 5.37 | 80 | 5.17 | 57 | 5.35 | 78 | 5.87 | 164 |
| 20 | 7.17 | 428 | 6.39 | 268 | 6.58 | 306 | 6.44 | 196 | 6.79 | 278 | 9.67 | 1150 | 6.54 | 298 | 6.67 | 324 | 5.58 | 112 | 5.14 | 54 | 5.25 | 65 | 6.83 | 356 |
| 21 | 7.25 | 447 | 6.19 | 228 | 6.46 | 282 | 6.54 | 214 | 6.73 | 288 | 10.37 | 1390 | 6.29 | 248 | 6.44 | 278 | 6.62 | 314 | 5.27 | 67 | 5.37 | 80 | 7.06 | 402 |
| 22 | 6.72 | 334 | 6.19 | 228 | 9.19 | 985 | 6.56 | 212 | 6.79 | 298 | 12.50 | 2220 | 6.19 | 228 | 6.21 | 232 | 6.04 | 198 | 5.14 | 54 | 5.37 | 80 | 6.58 | 306 |
| 23 | 6.35 | 260 | 6.27 | 244 | 9.37 | 1040 | 6.48 | 220 | 6.83 | 310 | 13.92 | 2790 | 7.04 | 398 | 6.06 | 202 | 5.69 | 129 | 5.12 | 52 | 5.39 | 84 | 6.08 | 206 |
| 24 | 6.35 | 260 | 6.31 | 252 | 9.60 | 1120 | 6.50 | 230 | 6.75 | 340 | 11.98 | 2010 | 7.06 | 402 | 5.94 | 178 | 5.67 | 125 | 5.25 | 65 | 5.25 | 65 | 6.04 | 198 |
| 25 | 6.33 | 256 | 6.21 | 232 | 9.83 | 1200 | 6.50 | 230 | 6.85 | 360 | 10.60 | 1480 | 6.64 | 318 | 6.79 | 348 | 5.52 | 103 | 5.21 | 61 | 5.39 | 84 | 5.85 | 160 |
| 26 | 6.23 | 236 | 6.19 | 228 | 9.92 | 1240 | 6.62 | 250 | 6.92 | 374 | 9.73 | 1170 | 6.31 | 252 | 6.44 | 278 | 5.37 | 80 | 5.29 | 69 | 5.42 | 88 | 5.75 | 140 |
| 27 | 6.58 | 306 | 6.37 | 264 | 10.10 | 1300 | 6.42 | 210 | 8.45 | 765 | 9.21 | 995 | 7.44 | 495 | 6.21 | 232 | 5.35 | 78 | 5.29 | 69 | 5.35 | 78 | 5.83 | 156 |
| 28 | 7.08 | 406 | 6.31 | 252 | 11.06 | 1650 | 6.54 | 234 | 10.79 | 1540 | 8.42 | 755 | 9.79 | 1190 | 6.17 | 224 | 5.33 | 75 | 5.27 | 67 | 5.37 | 80 | 5.79 | 148 |
| 29 | 7.00 | 390 | 6.31 | 252 | 10.58 | 1470 | 6.62 | 250 | 13.87 | 2770 | 7.87 | 600 | 8.23 | 700 | 5.94 | 178 | 5.35 | 78 | 5.23 | 63 | 5.64 | 121 | 5.71 | 132 |
| 30 | 6.92 | 374 | 6.29 | 248 | 9.06 | 950 | ..... | ..... | 19.77 | 5130 | 7.60 | 535 | 8.10 | 660 | 5.89 | 168 | 5.21 | 61 | 5.29 | 69 | 5.58 | 112 | 5.79 | 148 |
| 31 | ..... | ..... | 6.29 | 248 | 11.14 | 1680 | ..... | ..... | 19.25 | 4920 | ..... | ..... | 8.37 | 740 | ..... | .... | 5.35 | 78 | 5.29 | 69 | ..... | ..... | 5.71 | 132 |

## Monthly Discharge of Nottawasaga River near Nicolston for 1915-6

Drainage Area 416 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 447 | 164 | 245 | 1.07 | .39 | .59 | .66 |
| December " | 306 | 164 | 228 | .74 | .39 | .55 | .63 |
| January. (1916) | 1,680 | 244 | 677 | 4.04 | .59 | 1.63 | 1.88 |
| February | 2,720 | 196 | 438 | 6.54 | .47 | 1.05 | 1.13 |
| March | 5,130 | 220 | 722 | 12.33 | .53 | 1.74 | 2.01 |
| April | 4,390 | 535 | 1,450 | 10.55 | 1.29 | 3.49 | 3.89 |
| May | 1,190 | 228 | 456 | 2.86 | .55 | 1.10 | 1.27 |
| June | 740 | 168 | 384 | 1.78 | .40 | .92 | 1.03 |
| July | 164 | 61 | 111 | .39 | .15 | .27 | .31 |
| August | 140 | 48 | 68 | .34 | .12 | .16 | .18 |
| September | 121 | 50 | 75 | .29 | .12 | .18 | .20 |
| October | 402 | 65 | 143 | 1.97 | .16 | .34 | .39 |
| The year | 5,130 | 48 | 415 | 12.33 | .12 | 1.00 | 13.61 |

## Rocky Saugeen River near Markdale

Location—At the Glen Cross highway bridge, three-quarters of a mile above Hayward's Falls, near lot 5, concession 8, Township of Glenelg, County of Grey.

Records Available—Discharge measurements and daily gauge heights June 8, 1915, to October 31, 1916.

Drainage Area—96 square miles.

Gauge—Vertical staff 0 to 6 feet on the downstream side of the centre pier of bridge. The zero of gauge (elevation 0.00) is referred to a B.M. (elevation 29.65) painted on a rock projecting from bank 40 feet north from first telephone pole on left bank.

Channel and Control—The channel is straight for 200 feet above and 500 feet below the station. The bed and banks are permanent, as flood conditions do not exist on this stream.

Discharge Measurements—Made at a permanent wading section. When the river is extremely high measurements will be made from the bridge.

Winter Flow—Ice does have a serious effect at this section.

Regulation—The dam above has little effect on the river stage at this section.

Accuracy—The rating curve is well defined except for maximum flows.

Observer—Arthur McNally, Markdale.

### Discharge Measurements of Rocky Saugeen River near Markdale in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Dec. 9.... | Cunnington, G.. | 75 | 75 | 1.04 | 1.37 | 78 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 13.... | " .... | 85 | 150 | 1.48 | 2.25 | 223 (b) | ..... |
| Feb. 10.... | Roberts, E. .... | 85 | 158 | 1.38 | 2.25 | 218 | ..... |
| " 24.... | Cunnington, G.. | 82 | 125 | 1.08 | 1.83 | 138 | ..... |
| June 12.... | Roberts, E. .... | 85 | 128 | 1.18 | 1.92 | 150 | ..... |
| Oct. 4.... | " .... | 68 | 61 | .83 | 1.14 | 50 | ..... |

(a) Logs in stream.
(b) Ice measurement.

# Daily Gauge Height and Discharge of Rocky Saugeen River near Markdale for 1915-6

**Drainage Area, 96 Square Miles**

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1.25 | 58 | 1.75 | 123 | 1.67 | 111 | 2.58 | 291 | 1.92 | 115 | 3.50 | 520 | 2.33 | 234 | 2.08 | 181 | 1.75 | 122 | 1.33 | 67 | 1.25 | 59 | 1.17 | 53 |
| 2 | 1.33 | 67 | 1.75 | 123 | 1.75 | 123 | 2.67 | 313 | 1.83 | 101 | 3.42 | 500 | 2.50 | 273 | 1.92 | 151 | 1.75 | 122 | 1.33 | 67 | 1.25 | 59 | 1.17 | 53 |
| 3 | 1.33 | 67 | 1.75 | 123 | 1.75 | 123 | 2.75 | 332 | 1.83 | 101 | 3.25 | 457 | 2.50 | 273 | 1.92 | 151 | 1.67 | 111 | 1.33 | 67 | 1.25 | 59 | 1.17 | 53 |
| 4 | 1.33 | 67 | 1.67 | 111 | 1.67 | 111 | 2.67 | 313 | 1.83 | 101 | 3.25 | 457 | 2.50 | 273 | 1.92 | 151 | 1.67 | 111 | 1.33 | 67 | 1.25 | 59 | 1.17 | 53 |
| 5 | 1.33 | 67 | 1.58 | 98 | 1.67 | 111 | 2.58 | 291 | 1.75 | 91 | 3.00 | 395 | 2.42 | 255 | 1.92 | 151 | 1.67 | 111 | 1.33 | 67 | 1.25 | 59 | 1.17 | 53 |
| 6 | 1.25 | 58 | 1.58 | 98 | 1.75 | 123 | 2.50 | 273 | 1.75 | 91 | 2.83 | 353 | 2.42 | 255 | 1.92 | 151 | 1.58 | 98 | 1.33 | 67 | 1.25 | 59 | 1.17 | 53 |
| 7 | 1.25 | 58 | 1.50 | 88 | 1.75 | 123 | 2.50 | 273 | 1.75 | 91 | 2.67 | 313 | 2.33 | 234 | 1.92 | 151 | 1.58 | 98 | 1.33 | 67 | 1.25 | 59 | 1.17 | 53 |
| 8 | 1.25 | 58 | 1.50 | 88 | 1.75 | 123 | 2.50 | 273 | 1.67 | 81 | 2.58 | 291 | 2.25 | 216 | 1.92 | 151 | 1.58 | 98 | 1.33 | 67 | 1.33 | 67 | 1.17 | 53 |
| 9 | 1.25 | 58 | 1.42 | 78 | 1.67 | 111 | 2.50 | 273 | 1.67 | 81 | 2.58 | 291 | 2.25 | 216 | 1.92 | 151 | 1.50 | 88 | 1.33 | 67 | 1.33 | 67 | 1.17 | 53 |
| 10 | 1.25 | 58 | 1.42 | 78 | 1.75 | 123 | 2.25 | 216 | 1.67 | 81 | 2.50 | 273 | 2.17 | 200 | 2.00 | 165 | 1.50 | 88 | 1.33 | 67 | 1.33 | 67 | 1.17 | 53 |
| 11 | 1.25 | 58 | 1.42 | 78 | 1.75 | 123 | 2.33 | 234 | 1.67 | 81 | 2.58 | 291 | 2.17 | 200 | 1.92 | 151 | 1.50 | 88 | 1.42 | 78 | 1.25 | 59 | 1.17 | 53 |
| 12 | 1.25 | 58 | 1.42 | 78 | 1.83 | 135 | 2.33 | 234 | 1.67 | 81 | 2.58 | 291 | 2.17 | 200 | 1.92 | 151 | 1.50 | 88 | 1.33 | 67 | 1.25 | 59 | 1.17 | 53 |
| 13 | 1.25 | 58 | 1.42 | 78 | 1.92 | 151 | 2.67 | 313 | 1.67 | 81 | 2.67 | 313 | 2.17 | 200 | 1.92 | 151 | 1.50 | 88 | 1.25 | 59 | 1.25 | 59 | 1.33 | 67 |
| 14 | 1.25 | 58 | 1.42 | 78 | 2.33 | 234 | 2.67 | 259 | 1.67 | 81 | 2.75 | 332 | 2.00 | 165 | 1.92 | 151 | 1.50 | 88 | 1.25 | 59 | 1.25 | 59 | 1.25 | 59 |
| 15 | 1.25 | 58 | 1.50 | 88 | 2.00 | 165 | 2.67 | 259 | 1.58 | 70 | 2.92 | 375 | 2.17 | 200 | 2.00 | 165 | 1.50 | 88 | 1.25 | 59 | 1.17 | 53 | 1.25 | 59 |
| 16 | 1.25 | 58 | 1.50 | 88 | 1.83 | 135 | 2.58 | 239 | 1.67 | 81 | 2.83 | 353 | 2.17 | 200 | 2.25 | 216 | 1.50 | 88 | 1.25 | 59 | 1.17 | 53 | 1.25 | 59 |
| 17 | 1.25 | 58 | 1.50 | 88 | 1.92 | 151 | 2.58 | 239 | 1.67 | 81 | 2.83 | 353 | 2.08 | 181 | 2.50 | 273 | 1.50 | 88 | 1.25 | 59 | 1.08 | 47 | 1.25 | 59 |
| 18 | 1.33 | 67 | 1.58 | 98 | 1.92 | 151 | 2.50 | 216 | 1.67 | 81 | 2.75 | 332 | 2.08 | 181 | 2.33 | 234 | 1.42 | 78 | 1.25 | 59 | 1.08 | 47 | 1.25 | 59 |
| 19 | 1.50 | 88 | 1.67 | 111 | 2.00 | 165 | 2.42 | 200 | 1.58 | 69 | 2.67 | 313 | 2.08 | 181 | 2.25 | 216 | 1.42 | 78 | 1.25 | 59 | 1.08 | 47 | 1.33 | 67 |
| 20 | 1.58 | 98 | 1.67 | 111 | 2.08 | 181 | 2.33 | 185 | 1.58 | 69 | 2.75 | 332 | 2.08 | 181 | 2.17 | 200 | 1.42 | 78 | 1.25 | 59 | 1.08 | 47 | 1.33 | 67 |
| 21 | 1.58 | 98 | 1.58 | 98 | 2.33 | 234 | 2.33 | 185 | 1.58 | 69 | 2.75 | 332 | 2.00 | 165 | 2.00 | 165 | 1.50 | 88 | 1.25 | 59 | 1.17 | 53 | 1.42 | 78 |
| 22 | 1.50 | 88 | 1.58 | 98 | 2.83 | 353 | 2.25 | 171 | 1.67 | 111 | 3.08 | 415 | 2.00 | 165 | 1.92 | 151 | 1.50 | 88 | 1.17 | 53 | 1.25 | 59 | 1.42 | 78 |
| 23 | 1.42 | 78 | 1.50 | 88 | 2.83 | 353 | 2.25 | 171 | 1.75 | 123 | 2.92 | 375 | 2.00 | 165 | 1.83 | 135 | 1.50 | 88 | 1.17 | 53 | 1.25 | 59 | 1.33 | 67 |
| 24 | 1.42 | 78 | 1.58 | 98 | 2.83 | 353 | 2.08 | 138 | 1.75 | 123 | 2.83 | 353 | 2.00 | 165 | 1.83 | 135 | 1.42 | 78 | 1.17 | 53 | 1.25 | 59 | 1.33 | 67 |
| 25 | 1.50 | 88 | 1.50 | 88 | 2.75 | 332 | 2.08 | 138 | 1.75 | 123 | 2.83 | 353 | 1.92 | 151 | 1.83 | 135 | 1.42 | 78 | 1.17 | 53 | 1.25 | 59 | 1.33 | 67 |
| 26 | 1.67 | 111 | 1.58 | 98 | 2.67 | 313 | 2.08 | 138 | 1.75 | 123 | 2.67 | 313 | 1.92 | 151 | 1.83 | 135 | 1.33 | 67 | 1.25 | 59 | 1.25 | 59 | 1.25 | 59 |
| 27 | 1.75 | 123 | 1.67 | 111 | 2.92 | 375 | 2.08 | 138 | 1.83 | 135 | 2.50 | 273 | 1.92 | 151 | 1.83 | 135 | 1.33 | 67 | 1.25 | 59 | 1.25 | 59 | 1.25 | 59 |
| 28 | 1.75 | 123 | 1.58 | 98 | 2.92 | 375 | 2.00 | 125 | 2.00 | 165 | 2.50 | 273 | 2.00 | 165 | 1.83 | 135 | 1.33 | 67 | 1.25 | 59 | 1.33 | 67 | 1.25 | 59 |
| 29 | 1.75 | 123 | 1.58 | 98 | 2.92 | 375 | 1.92 | 115 | 2.42 | 255 | 2.42 | 255 | 2.08 | 181 | 1.83 | 135 | 1.33 | 67 | 1.25 | 59 | 1.25 | 59 | 1.25 | 59 |
| 30 | 1.75 | 123 | 1.58 | 98 | 2.75 | 332 | .... | ..... | 2.67 | 313 | 2.33 | 234 | 2.08 | 181 | 1.83 | 135 | 1.33 | 67 | 1.25 | 59 | 1.25 | 59 | 1.25 | 59 |
| 31 | .... | ..... | 1.58 | 98 | 2.58 | 291 | .... | ..... | 3.17 | 438 | .... | ..... | 2.08 | 181 | .... | ..... | 1.33 | 67 | 1.25 | 59 | .... | ..... | 1.25 | 59 |

## Monthly Discharge of Rocky Saugeen River near Markdale for 1915-6

Drainage Area, 96 Square Miles

| Month. | Discharge in Second-feet. | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915). | 123 | 58 | 77 | 1.28 | .60 | .80 | .89 |
| December .. | 123 | 78 | 96 | 1.28 | .81 | 1.00 | 1.15 |
| January (1916). | 375 | 111 | 208 | 3.91 | 1.16 | 2.17 | 2.50 |
| February ..... | 332 | 115 | 226 | 3.46 | 1.20 | 2.35 | 2.53 |
| March ..... | 438 | 69 | 119 | 4.56 | .72 | 1.24 | 1.43 |
| April ..... | 520 | 234 | 344 | 5.42 | 2.44 | 3.58 | 3.99 |
| May..... | 273 | 151 | 198 | 2.84 | 1.57 | 2.06 | 2.37 |
| June ..... | 273 | 135 | 162 | 2.84 | 1.41 | 1.69 | 1.89 |
| July..... | 122 | 67 | 88 | 1.27 | .70 | .92 | 1.06 |
| August..... | 78 | 53 | 62 | .81 | .55 | .65 | .75 |
| September ,.... | 67 | 47 | 58 | .70 | .49 | .60 | .67 |
| October ..... | 78 | 53 | 59 | .81 | .55 | .61 | .70 |
| The year..... | 520 | 47 | 141 | 5.42 | .49 | 1.47 | 20.01 |

## Saugeen River near Port Elgin

**Location**—At the highway bridge known at McCalder's Bridge, 4 miles north-east of the Town of Port Elgin, near lot 5, concession 12, Township of Saugeen, County of Bruce.

**Records Available**—Discharge measurements from July, 1911, to October, 1916. Daily gauge heights from April 19, 1914, to October 31, 1916.

**Drainage Area**—1,565 square miles.

**Gauge**—Vertical staff 0 to 12 feet on right abutment downstream side. Zero on gauge (elevation 4.00) is referred to a B.M. (elevation 25.00) painted on wooden hand-rail of bridge.

**Channel and Control**—The channel is straight for about 350 feet above and below the section. The bed of the stream, with two submerged piers at the section, is composed of fairly large boulders, which will only shift during high flood stages. The current is moderate and flows through two channels, which are separated by the centre pier of the bridge.

**Discharge Measurements**—Made from the bridge at all stages.

**Winter Flow**—Ice greatly affects relation of gauge height to discharge. Measurements are made during the winter to determine the flow.

**Regulation**—Fluctuations occur in the river stage at this section. This is no doubt caused by the plants at Walkerton, Chesley and Paisley.

**Accuracy**—Semi-daily reading should give a fair representative mean. The fluctuations that have been noted are not large, consequently the gauge height records can be classified as good. A well-defined curve is shown for flows up to 20,000 sec. feet. A slight angle in cross-section No. 1 may affect accuracy of meter measurements.

**Observer**—John Shanks, Southampton.

## Discharge measurements of Saugeen River near Port Elgin in 1915-6

| Date | Hydrographer | Width in Feet | Area of Seetion in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Diseharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 23.... | Yeates, W..... | 197 | 1,060 | 1.81 | 6.80 | 1,922 | ..... |
| 1916 | | | | | | | |
| Jan. 12.... | Cunnington, G... | 210 | 1,439 | 2.41 | 8.67 | 3,462 (a) | ..... |
| " 28.... | Yeates, W..... | 210 | 2,431 | 4.59 | 13.33 | 11,166 (b) | ..... |
| " 28.... | " .... | 210 | 2,410 | 4.59 | 13.26 | 11,070 (b) | ..... |
| " 28.... | " .... | 210 | 2,389 | 4.50 | 13.17 | 10,762 (b) | ..... |
| Feb. 2.... | " .... | 210 | 1,696 | 3.68 | 9.88 | 6,234 (c) | ..... |
| " 2.... | " .... | 210 | 1,675 | 3.64 | 9.79 | 6,095 (c) | ..... |
| Mar. 30.... | Roberts, E. .... | 210 | 2,578 | 6.45 | 14.03 | 16,637 (c) | ..... |
| " 30.... | " .... | 210 | 2,557 | 6.45 | 13.96 | 16,488 (c) | ..... |
| " 31.... | " .... | 210 | 2,431 | 5.96 | 13.31 | 14,477 (c) | ..... |
| " 31.... | " .... | 210 | 2,431 | 6.01 | 13.31 | 14,600 (c) | ..... |
| " 31.... | " .... | 210 | 2,578 | 6.44 | 14.00 | 16,576 (c) | ..... |
| Apr. 2.... | Yeates, W..... | 220 | 2,765 | 6.73 | 14.75 | 18,605 (c) | ..... |
| " 2.... | " .... | 220 | 2,699 | 6.62 | 14.48 | 17,880 (c) | ..... |
| " 3.... | " .... | 210 | 2,452 | 6.02 | 13.45 | 14,768 (c) | ..... |
| " 4.... | Roberts, E. .... | 210 | 2,305 | 5.45 | 12.75 | 12,556 (c) | ..... |
| " 4.... | " .... | 210 | 2.284 | 5.42 | 12.69 | 12,374 (c) | ..... |
| " 4.... | " .... | 210 | 2,242 | 5.22 | 12.49 | 11,694 (c) | ..... |
| " 4.... | " .... | 210 | 2,242 | 5.11 | 12.44 | 11,458 (c) | ..... |
| " 4.... | " .... | 210 | 2,221 | 5,14 | 12.39 | 11,423 (c) | ..... |
| " 5.... | " .... | 210 | 2,116 | 4.90 | 11.88 | 10,369 (c) | ..... |
| " 5.... | " .... | 210 | 2,074 | 4.66 | 11.66 | 9,652 (c) | ..... |
| " 5.... | " .... | 210 | 2,074 | 4.61 | 11.61 | 9,562 (c) | ..... |
| " 6.... | " .... | 210 | 1,927 | 4.25 | 10.96 | 8,185 (c) | ..... |
| " 7.... | " .... | 210 | 1,759 | 3.77 | 10.18 | 6,625 (c) | ..... |
| " 7.... | " .... | 210 | 1,811 | 3.82 | 10.40 | 6,922 (c) | ..... |
| " 8.... | " .... | 210 | 1,654 | 3.49 | 9.68 | 5,770 (c) | ..... |
| " 11.... | Yeates, W. .... | 210 | 1,381 | 2.79 | 8.33 | 3,852 (c) | ..... |
| " 11.... | " .... | 210 | 1,381 | 2.76 | 8.33 | 3,803 (c) | ..... |
| " 12.... | " .... | 210 | 1,444 | 2.84 | 8.67 | 4,103 (c) | ..... |
| " 12.... | " .... | 210 | 1,444 | 2.92 | 8.67 | 4,216 (c) | ..... |
| " 12.... | " .... | 210 | 1,444 | 2.95 | 8.69 | 4,266 (c) | ..... |
| " 12.... | " .... | 210 | 1,444 | 2.89 | 8.69 | 4,176 (c) | ..... |
| " 13.... | " .... | 210 | 1,538 | 3.19 | 9.19 | 4,905 (c) | ..... |
| " 13.... | " .... | 210 | 1,538 | 3.21 | 9.19 | 4,940 (c) | ..... |
| Oct. 5.... | " .... | 191 | 673 | .65 | 4.79 | 436 | ..... |

(a) Too many estimated velocities for accurate results.
(b) Ice and slush in stream: co-efficient applied to observed surface velocities.
(c) Co-efficient applied to observed surface velocities.

# Daily Gauge Height and Discharge of Saugeen River near Port Elgin for 1915-6

Drainage Area 1,565 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 5.29 | 694 | 7.83 | 3195 | 6.94 | 2215 | 10.58 | 7420 | 8.14 | 2995 | 14.87 | 19185 | 7.71 | 3060 | 6.54 | 1770 | 6.00 | 1220 | 4.85 | 460 | 4.69 | 402 | 5.02 | 540 |
| 2 | 5.27 | 682 | 7.50 | 2830 | 8.56 | 4085 | 9.85 | 6045 | 8.04 | 2885 | 14.92 | 19345 | 8.42 | 3900 | 6.48 | 1710 | 5.81 | 1070 | 4.83 | 452 | 4.67 | 396 | 4.98 | 520 |
| 3 | 5.23 | 658 | 7.27 | 2575 | 8.98 | 4670 | 9.42 | 5330 | 7.96 | 2775 | 13.58 | 15140 | 8.42 | 3900 | 6.42 | 1640 | 5.75 | 1020 | 4.81 | 444 | 4.69 | 402 | 4.89 | 476 |
| 4 | 5.21 | 646 | 7.06 | 2345 | 8.23 | 3675 | 7.77 | 3125 | 7.92 | 2720 | 12.57 | 12195 | 8.60 | 4140 | 6.35 | 1570 | 5.69 | 970 | 4.81 | 444 | 4.67 | 396 | 4.83 | 452 |
| 5 | 5.23 | 658 | 6.94 | 2215 | 9.25 | 5075 | 7.48 | 2810 | 7.83 | 2610 | 11.75 | 10025 | 8.46 | 3950 | 6.33 | 1550 | 5.62 | 915 | 4.77 | 430 | 4.67 | 396 | 4.79 | 436 |
| 6 | 5.29 | 694 | 6.79 | 2050 | 10.25 | 6775 | 7.67 | 3015 | 7.83 | 2610 | 11.10 | 8530 | 8.29 | 3750 | 6.27 | 1490 | 5.50 | 820 | 4.75 | 422 | 4.67 | 396 | 4.75 | 422 |
| 7 | 5.29 | 694 | 6.69 | 1940 | 8.77 | 4380 | 11.08 | 8485 | 7.75 | 2555 | 10 33 | 6925 | 7.83 | 3200 | 6.23 | 1450 | 5.37 | 740 | 4.79 | 437 | 4.67 | 396 | 4.75 | 422 |
| 8 | 5.25 | 670 | 6.60 | 1840 | 8.71 | 3880 | 10.12 | 6430 | 7.67 | 2500 | 9.54 | 5520 | 7.50 | 2830 | 6.14 | 1360 | 5.29 | 695 | 5.00 | 530 | 4.67 | 396 | 4.73 | 415 |
| 9 | 5.23 | 658 | 6.62 | 1860 | 8.60 | 3520 | 10.29 | 6395 | 7.58 | 2390 | 9.04 | 4760 | 7.37 | 2690 | 6.17 | 1390 | 5.27 | 680 | 5.04 | 550 | 4.67 | 396 | 4.69 | 402 |
| 10 | 5.21 | 646 | 6.37 | 1590 | 8.60 | 3520 | 10.46 | 6300 | 7.60 | 2390 | 8.52 | 4030 | 7.33 | 2640 | 6.12 | 1340 | 5.23 | 660 | 4.87 | 468 | 4.67 | 396 | 4.56 | 365 |
| 11 | 5.21 | 646 | 6.27 | 1490 | 8.69 | 3520 | 10.79 | 6215 | 7.69 | 2500 | 8.10 | 3520 | 7.39 | 2710 | 6.10 | 1320 | 5.29 | 695 | 4.83 | 452 | 4.67 | 396 | 4.52 | 355 |
| 12 | 5.29 | 694 | 6.46 | 1685 | 8.67 | 3495 | 10.46 | 6130 | 7.81 | 2610 | 8.67 | 4240 | 7.39 | 2710 | 6.19 | 1410 | 5.25 | 670 | 4.79 | 437 | 4.67 | 396 | 4.52 | 355 |
| 13 | 5.33 | 718 | 6.17 | 1390 | 9.14 | 4140 | 10.29 | 5960 | 7.81 | 2610 | 9.19 | 4985 | 7.31 | 2620 | 6.28 | 1500 | 5.21 | 645 | 4.75 | 422 | 4.67 | 396 | 4.85 | 460 |
| 14 | 5.31 | 706 | 5.77 | 1035 | 8.75 | 3520 | 10.08 | 5620 | 7.77 | 2555 | 10.33 | 6925 | 7.08 | 2370 | 6.29 | 1510 | 5.14 | 605 | 4.75 | 422 | 4.64 | 387 | 4.87 | 468 |
| 15 | 5.27 | 682 | 5.67 | 955 | 8.35 | 3105 | 10.00 | 5450 | 7.69 | 2500 | 11.25 | 8875 | 7.02 | 2300 | 6.27 | 1490 | 5.08 | 570 | 4.77 | 430 | 4.64 | 387 | 4.96 | 510 |
| 16 | 5.25 | 670 | 6.08 | 1300 | 8.14 | 2610 | 9.96 | 5375 | 7.60 | 2445 | 10.85 | 7985 | 7.06 | 2350 | 6.37 | 1590 | 4.96 | 510 | 4.75 | 422 | 4.67 | 396 | 5.10 | 580 |
| 17 | 5.29 | 694 | 6.50 | 1730 | 7.71 | 2335 | 10.19 | 5790 | 7.58 | 2390 | 10.14 | 6565 | 7.42 | 2740 | 9.42 | 5330 | 4.96 | 510 | 4.75 | 422 | 4.60 | 375 | 5.19 | 635 |
| 18 | 5.31 | 706 | 6.46 | 1685 | 7.50 | 2060 | 10.08 | 5300 | 7.48 | 2335 | 9.73 | 5840 | 7.35 | 2660 | 9.31 | 5760 | 4.92 | 490 | 4.75 | 422 | 4.56 | 365 | 5.29 | 695 |
| 19 | 5.75 | 1020 | 6.50 | 1730 | 7.17 | 1840 | 9.54 | 4700 | 7.39 | 2280 | 9.59 | 5605 | 7.27 | 2580 | 8.73 | 4320 | 5.02 | 540 | 4.73 | 415 | 4.52 | 355 | 5.44 | 785 |
| 20 | 6.87 | 2135 | 6.52 | 1750 | 7.10 | 1785 | 9.29 | 4420 | 7.29 | 2280 | 10.12 | 6530 | 7.23 | 2530 | 8.08 | 3500 | 5.02 | 540 | 4.85 | 460 | 4.60 | 375 | 5.46 | 795 |
| 21 | 7.35 | 2665 | 6.48 | 1710 | 7.12 | 1730 | 9.02 | 4000 | 7.37 | 2335 | 10.52 | 7290 | 7.04 | 2320 | 7.50 | 2830 | 5.12 | 590 | 4.94 | 500 | 4.67 | 396 | 5.50 | 820 |
| 22 | 7.14 | 2435 | 6.51 | 1740 | 13.37 | 13400 | 8.96 | 3940 | 7.35 | 2390 | 11.04 | 8390 | 6.89 | 2160 | 7.00 | 2250 | 5.19 | 635 | 4.89 | 476 | 4.67 | 396 | 5.54 | 850 |
| 23 | 6.90 | 2170 | 6.62 | 1860 | 11.02 | 8300 | 8.89 | 3880 | 7.25 | 2390 | 11.48 | 9405 | 6.87 | 2140 | 6.69 | 1940 | 5.33 | 720 | 4.85 | 460 | 4.69 | 402 | 5.48 | 810 |
| 24 | 6.60 | 1840 | 6.77 | 2025 | 10.33 | 6300 | 8.89 | 3880 | 7.27 | 2390 | 11.31 | 9015 | 6.83 | 2090 | 6.33 | 1550 | 5.29 | 695 | 4.79 | 437 | 4.75 | 422 | 5.42 | 770 |
| 25 | 6.64 | 1885 | 6.85 | 2115 | 10.39 | 6300 | 8.77 | 3700 | 7.17 | 2445 | 10.64 | 7545 | 6.77 | 2030 | 6.23 | 1450 | 5.25 | 670 | 4.81 | 444 | 4.77 | 430 | 5.39 | 755 |
| 26 | 6.56 | 1795 | 6.72 | 1970 | 10.92 | 7250 | 8.42 | 3280 | 7.29 | 2600 | 9.83 | 6010 | 6.75 | 2000 | 6.12 | 1340 | 5.19 | 635 | 4.81 | 444 | 4.77 | 430 | 5.33 | 720 |
| 27 | 7.14 | 2435 | 6.81 | 2070 | 11.08 | 7460 | 8.12 | 2940 | 8.92 | 4590 | 9.35 | 3225 | 6.92 | 2190 | 6.21 | 1430 | 5.14 | 605 | 4.81 | 444 | 4.75 | 422 | 5.29 | 695 |
| 28 | 8.12 | 3545 | 6.86 | 2125 | 13.25 | 10880 | 8.08 | 2885 | 12.33 | 11525 | 8.89 | 4545 | 7.21 | 2510 | 6.21 | 1430 | 5.08 | 570 | 4.75 | 422 | 4.85 | 460 | 5.39 | 755 |
| 29 | 8.46 | 3950 | 6.75 | 2005 | 12.27 | 8875 | 8.14 | 1995 | 14.33 | 17455 | 8.23 | 3675 | 7.33 | 2640 | 6.21 | 1430 | 4.98 | 520 | 4.75 | 422 | 4.92 | 490 | 5.35 | 730 |
| 30 | 8.42 | 3905 | 6.79 | 2050 | 11.44 | 8760 | ..... | ..... | 13.87 | 16010 | 7.85 | 3230 | 7.08 | 2370 | 6.21 | 1430 | 4.94 | 500 | 4.75 | 422 | 4.96 | 510 | 5.31 | 705 |
| 31 | ..... | ..... | 6.81 | 2070 | 11.20 | 8300 | ..... | ..... | 13.71 | 15530 | ..... | ..... | 6.85 | 2110 | ..... | 1430 | 4.89 | 475 | 4.73 | 416 | ..... | .... | 5.25 | 670 |

## Monthly Discharge of Saugeen River near Port Elgin for 1915-6

Drainage Area, 1,565 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November(1915). | 3,950 | 645 | 1,400 | 2.53 | .41 | .90 | 1.00 |
| December .. . | 3,195 | 955 | 1,900 | 2.05 | .61 | 1.22 | 1.40 |
| January ((1916). | 13,400 | 1,730 | 5,089 | 8.59 | 1.11 | 3.26 | 3.76 |
| February ..... | 8,485 | 2,810 | 4,890 | 5.44 | 1.80 | 3.13 | 3.37 |
| March..... | 17,455 | 2,280 | 4,213 | 11.19 | 1.46 | 2.70 | 3.11 |
| April..... | 19,345 | 3,220 | 7,702 | 12.40 | 2.06 | 4.94 | 5.51 |
| May ..... | 4,140 | 2,000 | 2,716 | 2.65 | 1.28 | 1.74 | 2.01 |
| June ..... | 5,330 | 1,320 | 1,984 | 3.42 | .85 | 1.27 | 1.42 |
| July..... | 1,220 | 475 | 683 | .78 | .30 | .44 | .51 |
| August ..... | 550 | 415 | 446 | .35 | .27 | .29 | .33 |
| September..... | 510 | 355 | 405 | .33 | .23 | .26 | .29 |
| October..... | 850 | 355 | 593 | .54 | .23 | .38 | .44 |
| The year ..... | 19,345 | 355 | 2,654 | 12.40 | .23 | 1.70 | 23.14 |

## Saugeen River near Walkerton

Location—At the south line bridge, 3½ miles above the Town of Walkerton, near lot 39, concession 2, Township of Brant, County of Bruce.

Records Available—Discharge measurements from June, 1912, to October, 1916. Daily gauge heights from March 26, 1914, to October 31, 1916.

Drainage Area—895 square miles.

Gauge—Vertical staff 0 to 12 feet on post driven in bed of stream and protected by overhanging tree on right bank 100 feet downstream from bridge. Zero on the gauge is 12.00 feet, which is referred to a B.M. (elevation 35.00) on tension rod of bridge.

Channel and Control—Channel is straight for about 500 feet above and below the section. Both banks are high, and do not overflow. The river bed is composed of clay, one channel existing at all stages.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice greatly affects relation of gauge height to discharge. Measurements are made to determine the winter flow.

Regulation—The dam at Walkerton, about 3½ miles downstream, has no effect on the river stage at this section.

Accuracy—Weeds below the section have a decided effect on the accuracy of the measurements. During the period when weeds are present, a different rating curve has been established. There are not sufficient records available to define the two curves at all stages, and therefore discharges cannot be classed as very good.

Observer—James Preston, Walkerton.

### Discharge Measurements of Saugeen River near Walkerton in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 24.... | Yeates, W. .... | 126 | 598 | 1.47 | 16.52 | 884 | ..... |
| 1916 | | | | | | | |
| Jan. 29.... | " .... | 135 | 1,485 | 3.66 | 23.04 | 5,439 (a) | ..... |
| April 3.... | " .... | 135 | 1,566 | 4.86 | 23.60 | 7,605 | ..... |
| June 13.... | Roberts, E..... | 125 | 621 | 1.61 | 16.68 | 1,001 | ..... |
| Oct. 4.... | Yeates, W. .... | 119 | 436 | .54 | 15.08 | 234 | ..... |

(a) Heavy slush in river.

## Daily Gauge Height and Discharge of Saugeen River near Walkerton for 1915-6

Drainage Area, 850 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 15.50 | 385 | 17.79 | 1,810 | 16.17 | 685 | 21.04 | 3,700 | 16.37 | 600 | ..... | 6,480 | 17.79 | 1,810 | 16.98 | 1,190 | 16.33 | 770 | 15.37 | 288 | 15.17 | 261 | 15.12 | 246 |
| 2 | 15.54 | 400 | 17.42 | 1,495 | 16.92 | 1,145 | 19.58 | 3,250 | 16.35 | 600 | ..... | 7,040 | 18.25 | 2,250 | 16.71 | 995 | 16.04 | 620 | 15.33 | 312 | 15.25 | 285 | 15.29 | 297 |
| 3 | 15.62 | 435 | 17.12 | 1,285 | 17.25 | 1,375 | 18.42 | 2,420 | 16.29 | 600 | 23.60 | 7,600 | 18.58 | 2,580 | 16.62 | 940 | 15.96 | 580 | 15.25 | 285 | 15.12 | 246 | 15.21 | 273 |
| 4 | 15.67 | 455 | 16.83 | 1,080 | 17.25 | 1,375 | 17.37 | 1,460 | 16.29 | 600 | 22.00 | 6,000 | 18.96 | 2,960 | 16.50 | 870 | 15.83 | 525 | 15.29 | 297 | 15.17 | 261 | 15.12 | 246 |
| 5 | 15.75 | 490 | 16.62 | 940 | 17.87 | 1,560 | 17.42 | 1,495 | 16.29 | 600 | 21.50 | 5,500 | 18.71 | 2,710 | 16.67 | 970 | 15.87 | 540 | 15.21 | 273 | 15.14 | 252 | 15.25 | 255 |
| 6 | 15.71 | 470 | 16.50 | 870 | 18.29 | 1,640 | 17.67 | 1,705 | 16.29 | 600 | 20.75 | 4,750 | 18.29 | 2,290 | 16.54 | 895 | 15.77 | 497 | 15.00 | 210 | 15.25 | 285 | 15.21 | 273 |
| 7 | 15.58 | 415 | 16.42 | 820 | 18.33 | 1,730 | 17.46 | 1,530 | 16.25 | 575 | 19.75 | 3,750 | 17.87 | 1,880 | 16.48 | 860 | 15.67 | 451 | 15.25 | 285 | 14.96 | 198 | 15.21 | 273 |
| 8 | 15.67 | 455 | 16.42 | 820 | 18.37 | 1,865 | 17.37 | 1,460 | 16.33 | 575 | 19.12 | 3,120 | 17.71 | 1,740 | 16.37 | 790 | 15.67 | 451 | 15.51 | 396 | 15.12 | 246 | 15.12 | 246 |
| 9 | 15.58 | 415 | 16.29 | 745 | 18.67 | 2,000 | 17.75 | 1,560 | 16.37 | 575 | 18.58 | 2,580 | 17.69 | 1,720 | 16.50 | 870 | 15.58 | 412 | 15.46 | 366 | 15.12 | 246 | 15.04 | 222 |
| 10 | 15.60 | 425 | 16.00 | 600 | 18.58 | 1,910 | 18.42 | 1,640 | 16.29 | 625 | 18.29 | 2,290 | 17.54 | 1,590 | 16.29 | 745 | 15.58 | 412 | 15.50 | 380 | 14.92 | 186 | 15.04 | 222 |
| 11 | 15.46 | 370 | 16.04 | 620 | 18.21 | 1,775 | 18.17 | 1,730 | 16.42 | 700 | 18.29 | 2,290 | 17.79 | 1,810 | 17.04 | 1,230 | 15.54 | 396 | 15.37 | 328 | 15.04 | 222 | 15.25 | 255 |
| 12 | 15.50 | 385 | 16.00 | 600 | 18.04 | 1,560 | 18.02 | 1,560 | 16.46 | 700 | 18.83 | 2,830 | 17.71 | 1,740 | 16.92 | 1,140 | 15.54 | 396 | 15.33 | 312 | 15.00 | 210 | 15.04 | 222 |
| 13 | 15.58 | 415 | 16.08 | 640 | 18.25 | 1,640 | 17.69 | 1,270 | 16.50 | 700 | 19.71 | 3,710 | 17.46 | 1,530 | 16.71 | 995 | 15.62 | 429 | 15.12 | 246 | 15.00 | 210 | 15.29 | 297 |
| 14 | 15.33 | 325 | 16.02 | 610 | 18.12 | 1,600 | 17.69 | 1,200 | 16.50 | 700 | 21.21 | 5,210 | 17.04 | 1,230 | 16.46 | 845 | 15.54 | 396 | 15.29 | 297 | 15.12 | 246 | 15.37 | 328 |
| 15 | 15.54 | 400 | 15.96 | 580 | 18.00 | 1,520 | 17.79 | 1,200 | 16.33 | 650 | 22.58 | 6,580 | 17.35 | 1,440 | 16.46 | 845 | 15.54 | 396 | 15.31 | 304 | 15.00 | 210 | 15.29 | 297 |
| 16 | 15.46 | 370 | 16.08 | 640 | 18.00 | 1,410 | 17.79 | 1,130 | 16.37 | 650 | 21.46 | 5,460 | 17.04 | 1,230 | 17.37 | 1,460 | 15.46 | 364 | 15.25 | 285 | 15.04 | 222 | 15.37 | 328 |
| 17 | 15.46 | 370 | 16.14 | 670 | 17.52 | 1,060 | 17.42 | 1,095 | 16.37 | 650 | 20.58 | 4,580 | 17.42 | 1,500 | 19.50 | 3,500 | 15.46 | 364 | 15.17 | 261 | 14.83 | 159 | 15.46 | 364 |
| 18 | 15.46 | 370 | 16.12 | 660 | 17.42 | 990 | 17.08 | 930 | 16.37 | 650 | 20.60 | 4,600 | 17.64 | 1,680 | 19.62 | 3,620 | 15.46 | 364 | 15.12 | 246 | 15.04 | 222 | 15.50 | 380 |
| 19 | 15.83 | 525 | 16.25 | 725 | 17.50 | 990 | 16.75 | 725 | 16.35 | 675 | 20.33 | 4,330 | 17.54 | 1,590 | 18.96 | 2,960 | 15.46 | 364 | 15.17 | 261 | 15.04 | 222 | 15.58 | 412 |
| 20 | 16.71 | 1,000 | 16.21 | 705 | 17.29 | 1,060 | 16.62 | 650 | 16.29 | 675 | 20.42 | 4,420 | 17.37 | 1,460 | 18.08 | 2,080 | 15.46 | 364 | 15.12 | 246 | 15.08 | 234 | 15.71 | 470 |
| 21 | 17.12 | 1,285 | 16.31 | 755 | 17.08 | 1,200 | 16.71 | 750 | 16.29 | 675 | 20.75 | 4,750 | 17.12 | 1,280 | 17.50 | 1,560 | 16.21 | 705 | 15.21 | 273 | 15.08 | 234 | 15.79 | 505 |
| 22 | 17.00 | 1,200 | 16.42 | 820 | 20.53 | 4,000 | 16.83 | 810 | 16.33 | 675 | 21.21 | 5,210 | 17.00 | 1,200 | 16.87 | 1,160 | 16.00 | 600 | 15.12 | 246 | 15.04 | 222 | 15.75 | 487 |
| 23 | 16.58 | 920 | 16.42 | 820 | 20.92 | 4,400 | 16.77 | 750 | 16.21 | 675 | 22.62 | 6,620 | 17.08 | 1,260 | 16.79 | 1,050 | 15.75 | 488 | 15.12 | 246 | 15.12 | 246 | 15.67 | 433 |
| 24 | 16.52 | 880 | 16.29 | 745 | 20.71 | 4,200 | 16.67 | 700 | 16.17 | 685 | 21.67 | 5,670 | 17.04 | 1,230 | 16.50 | 870 | 15.54 | 396 | 15.12 | 246 | 15.08 | 234 | 15.54 | 396 |
| 25 | 16.46 | 845 | 16.21 | 705 | 20.56 | 4,100 | 16.46 | 700 | 16.33 | 770 | 20.27 | 4,270 | 16.87 | 1,110 | 16.42 | 820 | 15.48 | 372 | 15.08 | 234 | 15.08 | 234 | 15.50 | 380 |
| 26 | 16.62 | 940 | 16.25 | 725 | 20.60 | 4,100 | 16.46 | 700 | 16.58 | 920 | 19.42 | 3,420 | 16.67 | 970 | 16.25 | 725 | 15.42 | 348 | 15.08 | 234 | 15.25 | 285 | 15.54 | 396 |
| 27 | 17.50 | 1,560 | 16.33 | 770 | 21.23 | 4,650 | 16.46 | 700 | 17.83 | 1,850 | 19.21 | 3,210 | 16.71 | 995 | 16.37 | 790 | 15.37 | 328 | 15.04 | 222 | 15.12 | 246 | 15.37 | 328 |
| 28 | 18.35 | 2,350 | 16.25 | 725 | 23.75 | 6,200 | 16.37 | 650 | 20.25 | 4,250 | 18.75 | 2,750 | 17.21 | 1,350 | 16.42 | 820 | 15.42 | 348 | 15.12 | 246 | 15.25 | 285 | 15.42 | 348 |
| 29 | 18.58 | 2,580 | 16.29 | 745 | 22.79 | 5,450 | 16.37 | 600 | ..... | 4,800 | 18.33 | 2,330 | 17.58 | 1,620 | 16.33 | 770 | 15.31 | 304 | 15.21 | 273 | 15.42 | 348 | 15.37 | 328 |
| 30 | 18.46 | 2,460 | 16.42 | 820 | 21.17 | 4,500 | ..... | ..... | ..... | 5,360 | 17.92 | 1,930 | 17.42 | 1,500 | 16.25 | 725 | 15.25 | 285 | 15.17 | 261 | 15.46 | 366 | 15.33 | 312 |
| 31 | ..... | ..... | 16.45 | 840 | 20.83 | 4,200 | ..... | ..... | ..... | 5,920 | ..... | ..... | 17.17 | 1,320 | ..... | ..... | 15.29 | 297 | 15.08 | 234 | ..... | ..... | 15.46 | 364 |

## Monthly Discharge of Saugeen River near Walkerton for 1915-6

Drainage Area 850 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 2,580 | 325 | 796 | 3.04 | .38 | .94 | 1.05 |
| December " | 1,810 | 580 | 819 | 2.13 | .68 | .96 | 1.11 |
| January .. (1916) | 6,200 | 685 | 2,448 | 7.29 | .81 | 2.88 | 3.32 |
| February ..... | 3,700 | 600 | 1,313 | 4.35 | .71 | 1.54 | 1.66 |
| March ..... | 5,920 | 577 | 1,267 | 6.96 | .68 | 1.49 | 1.72 |
| April ..... | 7,600 | 1,930 | 4,443 | 8.94 | 2.27 | 5.23 | 5.84 |
| May..... | 2,960 | 970 | 1,631 | 3.48 | 1.14 | 1.92 | 2.21 |
| June..... | 3,620 | 725 | 1,235 | 4.26 | .85 | 1.45 | 1.62 |
| July..... | 770 | 297 | 437 | .91 | .35 | .51 | .59 |
| August..... | 396 | 210 | 278 | .47 | .25 | .33 | .38 |
| September..... | 366 | 159 | 244 | .43 | .19 | .29 | .32 |
| October ..... | 505 | 222 | 328 | .59 | .26 | .39 | .45 |
| The year ..... | 7,600 | 159 | 1,268 | 8.94 | .19 | 1.49 | 20.28 |

## Sydenham near Owen Sound

**Location**—At the highway bridge above the Town of Owen Sound's filtration plant, near lot 9, concession 1, Township of Derby, County of Grey.

**Records Available**—Discharge measurements and daily gauge heights from June 9, 1915, to October 31, 1916.

**Drainage Area**—71 square miles.

**Gauge**—Vertical staff 0 to 6 feet on upstream side of first pier from right abutment. Zero on the gauge is 0.00.

**Channel and Control**—The channel is straight for 200 feet above and below the section, both banks are low, but do not overflow, the stream never assuming flood proportions. The bed is composed of solid rock, with two channels during the low-water period. During the high-water stages all the water is confined between the two abutments of the bridge.

**Discharge Measurements**—Made from the bridge during the high-water period, and from a permanent wading section located 30 feet upstream during the low stages.

**Winter Flow**—Ice has little effect.

**Regulation**—The Town of Owen Sound has a dam 300 feet above this section that is used to supply water for the filtration beds.

**Diversions**—An additional 750,000 gallons of water per day should be added to the daily flow at this section, which is the approximate amount diverted.

**Accuracy**—There are not sufficient readings to define a curve at all stages. Discharges between gauge heights .90 and 1.40 are fair.

**Observer**—Myrtle Cook, Ashley P.O.

### Discharge Measurements of Sydenham River near Owen Sound in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Dec. 9.... | Cunnington, G.. | 52 | 39 | 1.76 | 1.33 | 67 | ..... |
| 1916 | | | | | | | |
| June 12.... | Roberts, E.... | 60 | 47 | 1.73 | 1.42 | 81 | ..... |
| Oct. 4.... | Yeates, W.... | 46 | 19 | .91 | .92 | 18 | ..... |

# Daily Gauge Height and Discharge of Sydenham River near Owen Sound for 1915-6

Drainage Area, 71 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1.06 | 33 | 1.64 | 130 | 1.37 | 43 | 2.25 | 278 | 1.69 | 61 | 3.02 | 576 | 1.75 | 152 | 1.69 | 140 | 1.37 | 77 | 1.00 | 26 | 0.92 | 19 | 1.00 | 26 |
| 2 | 1.06 | 33 | 1.62 | 126 | 1.54 | 71 | 2.10 | 234 | 1.69 | 61 | 3.00 | 568 | 1.79 | 160 | 1.60 | 122 | 1.33 | 71 | 0.96 | 22 | 0.92 | 19 | 1.92 | 19 |
| 3 | 1.08 | 35 | 1.50 | 102 | 1.71 | 112 | 2.04 | 217 | 1.83 | 74 | 2.71 | 448 | 1.87 | 177 | 1.54 | 110 | 1.29 | 64 | 0.96 | 22 | 0.92 | 19 | 1.92 | 19 |
| 4 | 1.10 | 37 | 1.46 | 94 | 1.79 | 122 | 1.94 | 193 | 1.79 | 69 | 2.54 | 380 | 1.92 | 188 | 1.50 | 102 | 1.25 | 58 | 0.92 | 19 | 0.96 | 22 | 1.87 | 15 |
| 5 | 1.17 | 46 | 1.42 | 86 | 2.10 | 184 | 1.83 | 169 | 1.83 | 74 | 2.37 | 318 | 1.85 | 173 | 1.50 | 102 | 1.25 | 58 | 0.92 | 19 | 0.92 | 19 | 1.87 | 15 |
| 6 | 1.17 | 46 | 1.42 | 86 | 2.19 | 220 | 1.81 | 112 | 1.71 | 58 | 2.19 | 259 | 1.79 | 160 | 1.46 | 94 | 1.25 | 58 | 0.92 | 19 | 0.92 | 19 | 1.87 | 15 |
| 7 | 1.17 | 46 | 1.37 | 77 | 2.23 | 234 | 2.06 | 132 | 1.73 | 63 | 2.06 | 223 | 1.75 | 152 | 1.39 | 80 | 1.21 | 52 | 0.92 | 19 | 0.92 | 19 | 1.87 | 15 |
| 8 | 1.12 | 40 | 1.33 | 71 | 2.08 | 206 | 2.00 | 128 | 1.85 | 66 | 2.00 | 206 | 1.71 | 144 | 1.33 | 71 | 1.17 | 46 | 0.96 | 22 | 0.92 | 19 | 1.92 | 19 |
| 9 | 1.08 | 35 | 1.29 | 64 | 1.96 | 173 | 1.83 | 116 | 1.87 | 68 | 1.89 | 182 | 1.71 | 144 | 1.33 | 71 | 1.17 | 46 | 0.96 | 22 | 0.87 | 15 | 1.92 | 19 |
| 10 | 1.08 | 35 | 1.37 | 61 | 1.87 | 152 | 1.75 | 102 | 1.87 | 71 | 1.83 | 169 | 1.67 | 136 | 1.44 | 90 | 1.12 | 40 | 1.00 | 26 | 0.87 | 15 | 1.92 | 19 |
| 11 | 1.06 | 33 | 1.33 | 56 | 1.89 | 156 | 1.71 | 88 | 2.08 | 86 | 1.87 | 177 | 1.67 | 136 | 1.42 | 84 | 1.12 | 40 | 1.00 | 26 | 0.92 | 19 | 1.92 | 19 |
| 12 | 1.08 | 35 | 1.37 | 50 | 1.85 | 142 | 1.69 | 77 | 1.98 | 74 | 1.98 | 202 | 1.67 | 136 | 1.42 | 84 | 1.08 | 35 | 1.00 | 26 | 0.92 | 19 | 1.92 | 19 |
| 13 | 1.08 | 35 | 1.27 | 47 | 2.02 | 173 | 1.81 | 96 | 1.87 | 61 | 2.08 | 228 | 1.67 | 136 | 1.33 | 71 | 1.08 | 35 | 1.00 | 26 | 0.92 | 19 | 1.96 | 22 |
| 14 | 1.08 | 35 | 1.29 | 45 | 2.04 | 184 | 1.85 | 82 | 1.85 | 61 | 2.12 | 240 | 1.58 | 118 | 1.29 | 64 | 1.08 | 35 | 1.00 | 26 | 0.92 | 19 | 1.00 | 26 |
| 15 | 1.08 | 35 | 1.31 | 42 | 1.94 | 162 | 1.64 | 66 | 1.87 | 61 | 2.27 | 284 | 1.56 | 114 | 1.37 | 77 | 1.08 | 35 | 1.00 | 26 | 9.92 | 19 | 1.00 | 26 |
| 16 | 1.08 | 35 | 1.25 | 37 | 1.83 | 146 | 1.62 | 63 | 2.00 | 74 | 2.12 | 240 | 1.54 | 110 | 1.87 | 177 | 1.08 | 35 | 1.00 | 26 | 0.92 | 19 | 1.00 | 26 |
| 17 | 1.08 | 35 | 1.27 | 37 | 1.96 | 162 | 1.62 | 61 | 1.92 | 66 | 2.00 | 206 | 1.58 | 118 | 2.42 | 335 | 1.04 | 30 | 1.00 | 26 | 0.87 | 15 | 1.04 | 30 |
| 18 | 1.06 | 33 | 1.33 | 43 | 1.89 | 152 | 1.64 | 61 | 2.08 | 74 | 2.00 | 206 | 1.58 | 118 | 2.58 | 394 | 1.00 | 26 | 0.96 | 22 | 0.92 | 19 | 1.04 | 30 |
| 19 | 1.21 | 52 | 1.33 | 43 | 1.81 | 144 | 1.79 | 71 | 2.17 | 90 | 2.00 | 206 | 1.58 | 118 | 2.33 | 304 | 1.00 | 26 | 0.96 | 22 | 0.92 | 19 | 1.08 | 35 |
| 20 | 1.40 | 82 | 1.29 | 37 | 1.73 | 132 | 1.67 | 58 | 2.17 | 86 | 1.98 | 202 | 1.58 | 118 | 2.08 | 228 | 1.00 | 26 | 0.92 | 19 | 0.92 | 19 | 1.12 | 40 |
| 21 | 1.54 | 110 | 1.33 | 41 | 1.69 | 140 | 1.79 | 69 | 2.00 | 79 | 2.06 | 223 | 1.54 | 110 | 1.92 | 188 | 1.04 | 30 | 0.96 | 22 | 0.92 | 19 | 1.17 | 46 |
| 22 | 1.58 | 118 | 1.33 | 41 | 2.35 | 311 | 1.62 | 58 | 1.89 | 74 | 2.10 | 234 | 1.50 | 102 | 1.83 | 169 | 1.08 | 35 | 1.00 | 26 | 0.92 | 19 | 1.17 | 46 |
| 23 | 1.58 | 118 | 1.33 | 41 | 2.79 | 484 | 1.62 | 58 | 2.12 | 112 | 2.35 | 311 | 1.50 | 102 | 1.67 | 136 | 1.08 | 35 | 1.04 | 30 | 0.92 | 19 | 1.17 | 46 |
| 24 | 1.58 | 118 | 1.37 | 46 | 2.62 | 412 | 1.58 | 49 | 2.12 | 118 | 2.23 | 272 | 1.50 | 102 | 1.62 | 126 | 1.04 | 30 | 0.92 | 19 | 0.92 | 19 | 1.12 | 40 |
| 25 | 1.44 | 90 | 1.33 | 41 | 2.39 | 325 | 1.58 | 49 | 1.87 | 106 | 2.04 | 217 | 1.46 | 94 | 1.54 | 170 | 1.00 | 26 | 0.92 | 19 | 0.92 | 19 | 1.08 | 35 |
| 26 | 1.42 | 86 | 1.35 | 43 | 2.39 | 325 | 1.58 | 49 | 1.79 | 142 | 1.94 | 193 | 1.42 | 86 | 1.50 | 102 | 1.00 | 26 | 0.96 | 22 | 0.92 | 19 | 1.08 | 35 |
| 27 | 1.44 | 90 | 1.39 | 43 | 2.46 | 350 | 1.62 | 56 | 1.89 | 182 | 1.85 | 173 | 1.42 | 86 | 1.50 | 102 | 1.00 | 26 | 0.96 | 22 | 0.92 | 19 | 1.04 | 30 |
| 28 | 1.52 | 106 | 1.42 | 43 | 2.73 | 456 | 1.71 | 61 | 2.12 | 240 | 1.81 | 164 | 1.71 | 144 | 1.50 | 102 | 1.00 | 26 | 0.96 | 22 | 0.96 | 22 | 1.04 | 30 |
| 29 | 1.58 | 118 | 1.42 | 43 | 2.48 | 357 | 1.62 | 56 | 2·46 | 350 | 1.75 | 152 | 1.92 | 188 | 1.50 | 102 | 1.00 | 26 | 0.92 | 19 | 1.00 | 26 | 1.04 | 30 |
| 30 | 1.62 | 126 | 1.42 | 43 | 2.25 | 278 | .... | ..... | 2.83 | 500 | 1.75 | 152 | 1.83 | 169 | 1.42 | 86 | 0.96 | 22 | 0.92 | 19 | 1.00 | 26 | 1.00 | 30 |
| 31 | ..... | ..... | 1.37 | 43 | 2.23 | 272 | .... | ..... | 2.92 | 536 | .... | ..... | 1.77 | 156 | .... | ..... | 1.00 | 26 | 0.92 | 19 | ..... | .... | ..1.00 | 30 |

## Monthly Discharge of Sydenham River near Owen Sound for 1915-6

Drainage Area 71 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November.(1915) | 126 | 33 | 62 | 1.77 | .46 | .87 | .97 |
| December " | 130 | 37 | 58 | 1.83 | .52 | .82 | .95 |
| January .. (1916) | 484 | 43 | 219 | 6.82 | .61 | 3.08 | 3.55 |
| February ..... | 278 | 49 | 100 | 3.92 | .69 | 1.41 | 1.52 |
| March ..... | 536 | 58 | 124 | 7.55 | .82 | 1.75 | 2.02 |
| April..... | 576 | 152 | 254 | 8.11 | 2.14 | 3.58 | 3.99 |
| May ..... | 188 | 86 | 134 | 2.65 | 1.21 | 1.89 | 2.18 |
| June..... | 394 | 64 | 134 | 5.55 | .90 | 1.89 | 2.11 |
| July..... | 77 | 22 | 39 | 1.08 | .31 | .55 | .63 |
| August ..... | 26 | 19 | 23 | .37 | .27 | .32 | .37 |
| September ..... | 26 | 15 | 19 | .37 | .21 | .27 | .30 |
| October..... | 46 | 15 | 27 | .65 | .21 | .38 | .44 |
| The year ..... | 576 | 15 | 99 | 8.11 | .21 | 1.39 | 18.92 |

## Thames River (Main Stream) near Byron

**Location**—At the highway bridge known as Kilworth Bridge, 2 miles north-west of the Town of Byron, near the Village of Komoka, Township of Delaware, County of Middlesex.

**Records Available**—Monthly discharge measurements from March, 1912, to August, 1916. Daily gauge heights from March 13, 1914, to October 31, 1916.

**Drainage Area**—1,270 square miles.

**Gauge**—Vertical staff 0 to 12 feet on centre pier. The zero on gauge (elevation 6.00), which has remained unchanged since established, is referred to a B.M. (elevation. 31.21) on downstream side of right abutment.

**Channel and Control**—The channel is straight above and below section for about 600 feet. The banks are high, and do not overflow or shift to a great extent. The control, however, is not stationary under high-water conditions. The velocity is high.

**Discharge Measurements**—Made from the bridge at all stages.

**Winter Flow**—Ice is present during the winter period, and measurements are made to determine the winter flow.

**Accuracy**—During flood stages the high velocity necessitates the taking of surface readings. The station rating curve is fairly well defined for ordinary flows.

**Observer**—James Bourne, Komoka.

### Discharge Measurements of Thames River (main stream) near Byron in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 12.... | Yeates, W. .... | 197 | 229 | 1.34 | 6.63 | 319 | ..... |
| 1916 | | | | | | | |
| Jan. 25.... | " .... | 239 | 964 | 4.73 | 9.90 | 4,563 (a) | ..... |
| Feb. 23.... | " .... | 201 | 267 | 2.25 | 6.87 | 600 (b) | ..... |
| Mar. 29.... | " .... | 256 | 2,154 | 7.49 | 14.67 | 16,139 | ..... |
| " 31.... | " .... | 262 | 1,828 | 7.24 | 13·48 | 13,593 | ..... |
| Aug. 22.... | " .... | 181 | 175 | .76 | 6.38 | 133 | ..... |

(a) Surface velocities.
(b) Ice on control.

## Daily Gauge Height and Discharge of Thames River (main stream) near Byron for 1915-6

Drainage Area, 1270 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 6.67 | 402 | 8.87 | 3000 | 7.50 | 1180 | 12.58 | 10650 | 6.83 | 525 | 12.04 | 9300 | 7.42 | 1100 | 9.96 | 4830 | 6.75 | 440 | 6.33 | 118 | 6.33 | 118 | 6.46 | 208 |
| 2 | 6.71 | 428 | 8.29 | 2200 | 9.46 | 3940 | 9.83 | 4590 | 6.83 | 525 | 11.92 | 9010 | 7.29 | 970 | 8.71 | 2760 | 6.75 | 440 | 6.50 | 240 | 6.33 | 118 | 6.42 | 176 |
| 3 | 6.67 | 402 | 7.96 | 1770 | 11.29 | 7540 | 8.62 | 2640 | 6.87 | 555 | 10.37 | 5640 | 7.54 | 1230 | 8.92 | 3080 | 6.75 | 440 | 6.42 | 176 | 6.33 | 118 | 6.42 | 176 |
| 4 | 6.58 | 352 | 7.75 | 1500 | 10.71 | 6320 | 7.29 | 970 | 6.83 | 525 | 9.58 | 4140 | 8.54 | 2530 | 8.62 | 2640 | 6.67 | 376 | 6.33 | 118 | 6.33 | 118 | 6.37 | 142 |
| 5 | 6.62 | 372 | 7.62 | 1330 | 11.54 | 8100 | 7.29 | 970 | 6.75 | 460 | 9.17 | 2470 | 8.12 | 1980 | 8.46 | 2420 | 6.67 | 376 | 6.33 | 118 | 6.33 | 118 | 6.33 | 118 |
| 6 | 6.67 | 402 | 7.50 | 1180 | 15.50 | 18450 | 7.42 | 1100 | 6.83 | 525 | 8.96 | 3140 | 7.67 | 1380 | 8.29 | 2200 | 6.67 | 376 | 6.33 | 118 | 6.33 | 118 | 6.33 | 118 |
| 7 | 6.67 | 402 | 7.46 | 1140 | 11.96 | 9100 | 7.21 | 890 | 6.87 | 555 | 8.50 | 2470 | 7.42 | 1100 | 7.96 | 1770 | 6.67 | 376 | 6.27 | 85 | 6.29 | 95 | 6.33 | 118 |
| 8 | 6.54 | 336 | 7.33 | 1010 | 10.71 | 6320 | 6.67 | 402 | 6.92 | 600 | 8.17 | 2040 | 7.58 | 1280 | 11.12 | 7160 | 6.58 | 304 | 6.29 | 95 | 6.33 | 118 | 6.33 | 118 |
| 9 | 6.58 | 352 | 7.33 | 1010 | 9.46 | 3940 | 6.87 | 555 | 7.00 | 680 | 8.00 | 1820 | 8.04 | 1870 | 10.29 | 5480 | 6.50 | 240 | 6.37 | 142 | 6.33 | 118 | 6.25 | 75 |
| 10 | 6.58 | 352 | 7.25 | 930 | 9.08 | 3330 | 7.00 | 680 | 7.00 | 680 | 7.83 | 1600 | 8.08 | 1920 | 9.08 | 3330 | 6.50 | 240 | 6.33 | 118 | 6.33 | 118 | 6.25 | 75 |
| 11 | 6.58 | 352 | 7.17 | 850 | 9.29 | 3660 | 7.08 | 760 | 7.04 | 720 | 7.67 | 1390 | 10.96 | 6820 | 8.54 | 2530 | 6.50 | 240 | 6.46 | 208 | 6.29 | 95 | 6.25 | 75 |
| 12 | 6.58 | 352 | 7.00 | 680 | 8.87 | 3000 | 7.12 | 800 | 6.92 | 600 | 8.08 | 1920 | 9.42 | 3870 | 8.62 | 2640 | 6.58 | 304 | 6.37 | 142 | 6.33 | 118 | 6.33 | 118 |
| 13 | 6.67 | 402 | 6.92 | 600 | 12.79 | 11170 | 7.12 | 800 | 6.87 | 555 | 8.83 | 2940 | 8.21 | 2090 | 8.17 | 2040 | 6.62 | 336 | 6.37 | 142 | 6.33 | 118 | 6.37 | 142 |
| 14 | 6.67 | 402 | 6.79 | 492 | 10.96 | 6820 | 7.37 | 1050 | 6.96 | 640 | 10.79 | 6480 | 7.79 | 1550 | 7.71 | 1440 | 6.71 | 408 | 6.42 | 176 | 6.25 | 75 | 6.46 | 208 |
| 15 | 6.62 | 372 | 6.75 | 460 | 9.71 | 4380 | 7.67 | 1390 | 7.00 | 680 | 11.29 | 7540 | 9.04 | 3260 | 7.46 | 1140 | 6.58 | 304 | 6.37 | 142 | 6.33 | 118 | 6.50 | 240 |
| 16 | 6.67 | 402 | 7.04 | 720 | 8.58 | 2580 | 7.33 | 1010 | 7.08 | 760 | 9.71 | 4380 | 10.96 | 6820 | 7.04 | 720 | 6.54 | 272 | 6.33 | 118 | 6.25 | 75 | 6.50 | 240 |
| 17 | 6.67 | 402 | 7.08 | 760 | 11.92 | 9010 | 7.12 | 800 | 6.96 | 640 | 9.46 | 3940 | 10.79 | 6480 | 7.58 | 1280 | 6.71 | 408 | 6.33 | 118 | 6.29 | 95 | 6.46 | 208 |
| 18 | 6.67 | 402 | 7.17 | 850 | 11.33 | 7630 | 7.04 | 720 | 7.25 | 930 | 9.87 | 5670 | 9.83 | 4590 | 7.71 | 1440 | 6.50 | 240 | 6.29 | 95 | 6.29 | 95 | 6.42 | 176 |
| 19 | 6.92 | 600 | 7.50 | 1180 | 11.54 | 8100 | 7.00 | 680 | 6.96 | 640 | 9.04 | 3260 | 9.08 | 3330 | 7.71 | 1440 | 6.50 | 240 | 6.29 | 95 | 6.29 | 118 | 6.42 | 208 |
| 20 | 9.42 | 3870 | 7.62 | 1330 | 11.62 | 8290 | 6.92 | 600 | 7.00 | 680 | 8.42 | 2370 | 8.75 | 2820 | 7.54 | 1230 | 6.46 | 208 | 6.33 | 118 | 6.33 | 118 | 6.62 | 336 |
| 21 | 9.29 | 3660 | 7.58 | 1280 | 11.83 | 8790 | 6.83 | 525 | 6.87 | 555 | 8.46 | 2420 | 8.58 | 2580 | 7.37 | 1050 | 6.42 | 176 | 6.37 | 142 | 6.29 | 95 | 6.75 | 440 |
| 22 | 8.62 | 2640 | 7.54 | 1230 | 14.12 | 14720 | 6.92 | 600 | 6.83 | 525 | 8.46 | 2420 | 8.00 | 1820 | 7.21 | 890 | 6.42 | 176 | 6.33 | 118 | 6.25 | 75 | 6.71 | 408 |
| 23 | 8.08 | 1920 | 7.46 | 1140 | 13.54 | 13160 | 6.83 | 525 | 6.96 | 640 | 8.37 | 2300 | 10.58 | 6060 | 7.04 | 720 | 6.46 | 208 | 6.33 | 118 | 6.25 | 75 | 6.58 | 304 |
| 24 | 8.17 | 2040 | 7.58 | 1280 | 12.46 | 10350 | 6.87 | 555 | 6.87 | 555 | 8.21 | 2090 | 9.87 | 4670 | 7.08 | 760 | 6.42 | 176 | 6.33 | 118 | 6.33 | 95 | 6.50 | 240 |
| 25 | 7.71 | 1440 | 7.67 | 1390 | 10.04 | 4980 | 6.83 | 525 | 7.00 | 680 | 7.87 | 1650 | 8.79 | 2880 | 7.33 | 1010 | 6.42 | 176 | 6.33 | 118 | 6.33 | 118 | 6.50 | 240 |
| 26 | 7.83 | 1600 | 7.58 | 1280 | 9.50 | 4000 | 6.87 | 555 | 7.58 | 1280 | 8.08 | 1920 | 8.00 | 1820 | 7.33 | 1010 | 6.46 | 208 | 6.33 | 118 | 6.33 | 118 | 6.42 | 176 |
| 27 | 8.25 | 2140 | 7.79 | 1550 | 10.04 | 4980 | 6.83 | 525 | 11.33 | 7630 | 8.79 | 2880 | 7.67 | 1390 | 7.42 | 1100 | 6.54 | 272 | 6.33 | 118 | 6.33 | 118 | 6.42 | 176 |
| 28 | 9.75 | 4450 | 7.75 | 1500 | 13.50 | 13050 | 6.87 | 555 | 14.71 | 16320 | 8.67 | 2710 | 8.29 | 2200 | 7.12 | 800 | 6.42 | 176 | 6.33 | 118 | 6.37 | 142 | 6.42 | 176 |
| 29 | 9.50 | 4000 | 7.62 | 1330 | 10.67 | 6240 | 6.92 | 600 | 14.33 | 15290 | 8.00 | 1820 | 8.54 | 2530 | 6.92 | 600 | 6.42 | 176 | 6.33 | 118 | 6.46 | 208 | 6.46 | 208 |
| 30 | 9.96 | 4830 | 7.42 | 1100 | 9.67 | 4310 | ..... | ..... | 14.25 | 15080 | 7.67 | 1390 | 13.00 | 11700 | 6.83 | 510 | 6.42 | 176 | 6.33 | 118 | 6.50 | 240 | 6.46 | 208 |
| 31 | ..... | ..... | 7.50 | 1180 | 12.42 | 10250 | ..... | ..... | 12.96 | 11600 | ..... | ..... | 11.79 | 8700 | ..... | .... | 6.25 | 75 | 6.33 | 118 | ..... | .... | 6.50 | 240 |

## Monthly Discharge of Thames River near Byron for 1915-6

Drainage Area, 1,270 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile. | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November. (1915) | 4,830 | 336 | 1,336 | 3.80 | .26 | 1.05 | 1.17 |
| December. " | 3,000 | 460 | 1,202 | 2.36 | .36 | .95 | 1.10 |
| January...(1916) | 18,450 | 1,180 | 7,345 | 14.53 | .93 | 5.78 | 6.66 |
| February ..... | 10,650 | 402 | 1,277 | 8.39 | .32 | 1.01 | 1.09 |
| March ..... | 16,320 | 460 | 2,665 | 12.85 | .36 | 2.10 | 2.42 |
| April ..... | 9,300 | 1,390 | 3,437 | 7.32 | 1.09 | 2.71 | 3.02 |
| May..... | 11,700 | 970 | 3,334 | 9.21 | .76 | 2.63 | 3.03 |
| June..... | 7,160 | 510 | 2,001 | 5.64 | .40 | 1.58 | 1.76 |
| July..... | 440 | 75 | 276 | .35 | .06 | .22 | .25 |
| August ..... | 240 | 85 | 129 | .19 | .07 | .10 | .12 |
| September ..... | 240 | 75 | 116 | .19 | .06 | .09 | .10 |
| October..... | 440 | 75 | 197 | .35 | .06 | .16 | .18 |
| The year ..... | 18,450 | 75 | 1,949 | 14.53 | .06 | 1.53 | 20.82 |

## Thames River (North Branch) near Fanshawe

Location—At the highway bridge near Fanshawe Post Office, between lots 8 and 9, concessions 4 and 5, Township of London, County of Middlesex.

Records Available—Daily gauge heights and discharge measurements from May 13, 1915, to October 31, 1916.

Drainage Area—650 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment, downstream side. Elevation of zero on gauge 4.00 is referred to a B.M. (elevation 30.00) on tension rod, downstream side, 170 feet from the initial point of soundings.

Channel and Control—The channel is straight above and below section for 500 feet. The bed of the stream is composed of clay and gravel, the banks are high and will not overflow. The channel and control is shifting during high-water periods.

Discharge Measurements—Made from the bridge and at a permanent wading section about 500 feet above during low water.

Accuracy—There are not sufficient records available to define rating curve at all stages.

Observer—Allen Donley, London.

### Discharge Measurements of Thames River (North Branch) near Fanshawe in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 12.... | Yeates, W .... | 90 | 155 | .82 | 6.87 | 127 | ..... |
| 1916 | | | | | | | |
| Jan. 25.... | " .... | 171 | 904 | 2.25 | 9.15 | 2,038 (a) | ..... |
| Mar. 29.... | " .... | 171 | 1,264 | 4.71 | 11.29 | 5,953 (b) | ..... |
| " 31.... | " .... | 171 | 1,230 | 4.14 | 11.00 | 5,091 | ..... |
| Aug. 22.... | " .... | 28 | 17 | 1.08 | 6.10 | 18 | ..... |

(a) Heavy swell at gauge.
(b) Reading taken 500 feet above gauge.

## Daily Gauge Height and Discharge of Thames River (North Branch) near Fanshawe for 1915-6

Drainage Area, 650 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 7.02 | 156 | 8.67 | 1360 | 8.75 | 1460 | 8.83 | 940 | 9.25 | 390 | 10.35 | 4000 | 7.58 | 390 | 9.83 | 3080 | 7.62 | 412 | 6.25 | 28 | 6.10 | 18 | 6.54 | 58 |
| 2 | 6.98 | 145 | 8.50 | 1160 | 9.75 | 2950 | 8.79 | 795 | 8.98 | 380 | 9.98 | 3330 | 7.79 | 520 | 9.96 | 3300 | 7.48 | 340 | 6.33 | 35 | 6.19 | 23 | 6.48 | 51 |
| 3 | 6.96 | 140 | 8.12 | 770 | 13.33 | 10840 | 8.92 | 705 | 8.69 | 375 | 9.83 | 3080 | 8.04 | 695 | 9.58 | 2680 | 7.39 | 296 | 6.25 | 28 | 6.14 | 20 | 6.52 | 56 |
| 4 | 6.94 | 135 | 8.08 | 730 | 13.00 | 9980 | 12.46 | 660 | 8.50 | 365 | 9.69 | 2850 | 8.21 | 850 | 9.25 | 2170 | 7.31 | 264 | 6.35 | 37 | 6.10 | 18 | 6.39 | 41 |
| 5 | 6.81 | 102 | 7.89 | 645 | 12.62 | 9000 | 11.81 | 625 | 8.46 | 355 | 9.58 | 2680 | 8.08 | 730 | 8.87 | 1630 | 7.23 | 232 | 6.27 | 30 | 6.06 | 16 | 6.29 | 31 |
| 6 | 6.77 | 95 | 7.85 | 555 | 12.29 | 8170 | 11.81 | 625 | 8.42 | 350 | 9.04 | 1870 | 7.81 | 530 | 8.50 | 1160 | 7.23 | 232 | 6.21 | 25 | 6.04 | 14 | 6.27 | 30 |
| 7 | 6.71 | 85 | 7.75 | 490 | 11.75 | 6850 | 11.76 | 590 | 8.23 | 350 | 8.67 | 1360 | 7.69 | 454 | 8.27 | 910 | 7.13 | 197 | 6.23 | 26 | 6.10 | 18 | 6.19 | 23 |
| 8 | 6.67 | 80 | 7.71 | 465 | 11.58 | 6450 | 12.03 | 590 | 8.17 | 350 | 8.60 | 1280 | 7.67 | 442 | 8.06 | 715 | 7.10 | 187 | 6.23 | 26 | 6.14 | 20 | 6.19 | 23 |
| 9 | 6.71 | 85 | 7.67 | 440 | 11.25 | 5720 | 11.94 | 590 | 8.10 | 340 | 8.42 | 1070 | 7.60 | 400 | 7.85 | 555 | 7.04 | 169 | 6.27 | 30 | 6.10 | 18 | 6.14 | 20 |
| 10 | 6.79 | 98 | 7.58 | 390 | 10.71 | 4670 | 11.79 | 555 | 7.87 | 330 | 8.08 | 730 | 7.85 | 555 | 8.48 | 1140 | 6.94 | 139 | 6.19 | 23 | 6.10 | 18 | 6.08 | 17 |
| 11 | 6.87 | 118 | 7.58 | 390 | 9.75 | 2950 | 11.60 | 555 | 7.75 | 325 | 8.00 | 660 | 8.87 | 1630 | 8.27 | 910 | 6.96 | 145 | 6.10 | 18 | 6.14 | 20 | 6.10 | 18 |
| 12 | 6.98 | 145 | 7.56 | 380 | 8.96 | 1750 | 11.14 | 545 | 7.79 | 315 | 8.37 | 1020 | 8.62 | 1300 | 8.12 | 770 | 6.98 | 151 | 6.10 | 18 | 6.14 | 20 | 6.04 | 14 |
| 13 | 6.85 | 112 | 7.75 | 490 | 9.33 | 2290 | 9.87 | 525 | 7.83 | 305 | 8.71 | 1410 | 8.04 | 695 | 8.14 | 785 | 7.02 | 163 | 6.23 | 26 | 6.19 | 23 | 6.06 | 16 |
| 14 | 6.85 | 112 | 7.75 | 490 | 8.67 | 1360 | 9.75 | 525 | 7.73 | 300 | 8.54 | 1210 | 7.71 | 466 | 7.96 | 630 | 6.94 | 139 | 6.14 | 26 | 6.10 | 18 | 6.14 | 20 |
| 15 | 6.75 | 92 | 7.75 | 490 | 8.54 | 1210 | 9.75 | 525 | 7.64 | 296 | 9.75 | 2950 | 9.08 | 1920 | 7.77 | 505 | 6.81 | 104 | 6.10 | 18 | 6.14 | 20 | 6.19 | 23 |
| 16 | 6.87 | 118 | 8.08 | 730 | 8.50 | 1160 | 9.75 | 525 | 7.53 | 288 | 9.83 | 3080 | 9.37 | 2350 | 7.67 | 442 | 6.73 | 88 | 6.14 | 20 | 6.19 | 23 | 6.14 | 20 |
| 17 | 6.81 | 102 | 8.08 | 730 | 8.50 | 1160 | 9.75 | 505 | 7.44 | 284 | 9.81 | 3050 | 9.17 | 2050 | 7.62 | 412 | 6.69 | 80 | 6.10 | 18 | 6.14 | 20 | 6.08 | 17 |
| 18 | 6.79 | 98 | 8.25 | 890 | 8.50 | 1160 | 9.75 | 492 | 7.42 | 280 | 9.69 | 2850 | 8.75 | 1460 | 7.62 | 412 | 6.64 | 72 | 6.19 | 23 | 6.19 | 23 | 6.14 | 20 |
| 19 | 6.96 | 140 | 8.54 | 1210 | 8.50 | 1160 | 9.75 | 480 | 7.37 | 288 | 9.56 | 2650 | 8.37 | 1020 | 7.52 | 360 | 6.64 | 72 | 6.10 | 18 | 6.10 | 18 | 6.23 | 26 |
| 20 | 9.46 | 2490 | 8.54 | 1210 | 10.29 | 2250 | 9.50 | 460 | 7.37 | 288 | 9.40 | 2400 | 8.21 | 850 | 7.60 | 400 | 6.62 | 69 | 6.19 | 23 | 6.04 | 14 | 6.31 | 33 |
| 21 | 8.96 | 1750 | 8.52 | 1180 | 10.00 | 2250 | 9.50 | 460 | 7.35 | 288 | 9.04 | 1870 | 8.17 | 815 | 7.62 | 412 | 6.54 | 57 | 6.23 | 26 | 6.08 | 17 | 6.46 | 49 |
| 22 | 8.04 | 695 | 8.50 | 1160 | 9.42 | 2250 | 9.50 | 460 | 7.33 | 272 | 8.67 | 1360 | 7.98 | 645 | 7.54 | 370 | 6.39 | 41 | 6.10 | 18 | 6.10 | 18 | 6.46 | 49 |
| 23 | 7.96 | 630 | 8.50 | 1160 | 9.42 | 2250 | 9.50 | 448 | 7.29 | 256 | 8.67 | 1360 | 9.25 | 2170 | 7.67 | 442 | 6.42 | 44 | 6.14 | 20 | 6.10 | 18 | 6.42 | 44 |
| 24 | 7.94 | 620 | 8.50 | 1160 | 9.37 | 2250 | 9.50 | 442 | 7.27 | 248 | 8.12 | 770 | 8.73 | 1440 | 7.83 | 545 | 6.25 | 28 | 6.06 | 16 | 6.19 | 23 | 6.39 | 41 |
| 25 | 8.23 | 870 | 8.50 | 1160 | 9.33 | 2250 | 9.50 | 430 | 7.26 | 244 | 8.29 | 930 | 8.42 | 1070 | 7.85 | 555 | 6.29 | 31 | 6.06 | 16 | 6.14 | 20 | 6.37 | 39 |
| 26 | 9.33 | 2300 | 8.50 | 1160 | 9.50 | 2550 | 9.50 | 430 | 8.12 | 770 | 8.08 | 730 | 7.92 | 605 | 7.81 | 530 | 6.25 | 28 | 6.12 | 19 | 6.23 | 26 | 6.42 | 44 |
| 27 | 9.50 | 2550 | 9.50 | 1160 | 11.17 | 5560 | 9.48 | 412 | 10.25 | 3820 | 8.29 | 930 | 7.67 | 442 | 7.75 | 492 | 6.25 | 28 | 6.17 | 22 | 6.14 | 20 | 6.42 | 44 |
| 28 | 9.33 | 2300 | 8.50 | 1160 | 10.62 | 4500 | 9.44 | 400 | 11.50 | 6270 | 8.25 | 890 | 7.54 | 370 | 7.73 | 480 | 6.25 | 28 | 6.14 | 20 | 6.10 | 18 | 6.39 | 41 |
| 29 | 9.29 | 2230 | 8.50 | 1160 | 8.54 | 1210 | 9.47 | 400 | 11.27 | 5760 | 7.92 | 605 | 7.46 | 330 | 7.69 | 454 | 6.25 | 28 | 6.12 | 19 | 6.27 | 30 | 6.37 | 39 |
| 30 | 9.08 | 1920 | 8.50 | 1160 | 8.50 | 1160 | ..... | .... | 10.77 | 4780 | 7.92 | 605 | 7.46 | 330 | 7.69 | 454 | 6.25 | 28 | 6.14 | 20 | 6.12 | 19 | 6.23 | 26 |
| 31 | ..... | .... | 8.50 | 1160 | 8.71 | 1100 | ..... | .... | 10.42 | 4130 | ..... | .... | 8.42 | 1070 | .... | ..... | 6.25 | 28 | 6.17 | 22 | ..... | .... | 6.19 | 23 |

## Monthly Discharge of Thames River (North Branch) near Fanshawe for 1915-6

Drainage Area 650 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915). | 2,550 | 80 | 684 | 3.92 | .12 | 1.05 | 1.17 |
| December .. | 1,360 | 380 | 864 | 2.09 | .58 | 1.33 | 1.53 |
| January (1916). | 10,840 | 1,100 | 3,544 | 16.68 | 1.69 | 5.45 | 6.28 |
| February ..... | 940 | 400 | 541 | 1.45 | .62 | .83 | .90 |
| March ..... | 6,270 | 244 | 1,077 | 9.65 | .38 | 1.66 | 1.91 |
| April ..... | 4,000 | 605 | 1,786 | 6.25 | .93 | 2.75 | 3.07 |
| May ..... | 2,350 | 330 | 922 | 3.62 | .51 | 1.42 | 1.64 |
| June ..... | 3,300 | 360 | 923 | 5.08 | .66 | 1.42 | 1.58 |
| July ..... | 412 | 28 | 126 | .64 | .04 | .19 | .22 |
| August ..... | 37 | 16 | 23 | .06 | .02 | .04 | .05 |
| September ..... | 30 | 14 | 20 | .05 | .02 | .03 | .03 |
| October ..... | 58 | 14 | 32 | .09 | .02 | .05 | .06 |
| The year ..... | 10,840 | 14 | 881 | 16.68 | .02 | 1.36 | 18.51 |

## Thames River (South Branch) near Ealing

**Location**—At the highway bridge known as Vauxhall Bridge between lots 10 and 11, concession B, between Townships of London and Westminster, County of Middlesex.

**Records Available**—Daily gauge heights and discharge measurements from May 11, 1915, to October 31, 1916.

**Drainage Area**—515 square miles.

**Gauge**—Vertical staff 0 to 12 feet on downstream side of first right pier. Elevation of zero on gauge is 4.00, referred to B.M., elevation 30.00.

**Channel and Control**—The channel is straight above and below for 800 feet. The banks and control are shifting under high-water conditions.

**Discharge Measurements**—Made from the bridge. During the extreme low water a wading section is used.

**Winter Flow**—The relation of gauge height to discharge is affected by ice during the winter months.

**Accuracy**—The rating curve is fairly well defined up to gauge height 11.00 feet.

**Observer**—Geo. Leathorn, London.

### Discharge Measurements of Thames River (South Branch) near Ealing in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 12.... | Yeates, W.... | 151 | 235 | .85 | 6.46 | 201 | ..... |
| 1916 | | | | | | | |
| Jan. 24.... | " ..... | 193 | 1,185 | 2.40 | 11.83 | 2,849 (a) | ..... |
| Mar. 29.... | " ..... | 193 | 1,358 | 3.81 | 12.71 | 5,178 | ..... |
| " 31.... | " ..... | 193 | 1,107 | 3.15 | 11.35 | 3,485 | ..... |
| Aug. 23.... | " ..... | 86 | 87 | 1.06 | 6.09 | 92 (b) | ..... |

(a) Ice on both sides and bed of stream.
(b) Reading taken 500 feet above gauge.

## Daily Gauge Height and Discharge of Thames River (South Branch) near Ealing for 1915-6

Drainage Area, 515 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 6.50 | 210 | 8.33 | 955 | 7.83 | 705 | 12.25 | 4540 | 7.33 | 500 | 10.79 | 2890 | 7.21 | 455 | 9.64 | 1840 | 6.62 | 246 | 6.10 | 100 | 5.92 | 64 | 6.12 | 105 |
| 2 | 6.52 | 216 | 7.83 | 705 | 9.50 | 890 | 9.96 | 2100 | 7.29 | 485 | 10.42 | 2520 | 7.42 | 540 | 8.80 | 1230 | 6.50 | 210 | 6.12 | 105 | 5.92 | 64 | 6.00 | 80 |
| 3 | 6.42 | 186 | 7.54 | 585 | 13.46 | 2600 | 8.75 | 1200 | 7.25 | 470 | 9.69 | 1880 | 7.60 | 610 | 9.14 | 1470 | 6.60 | 240 | 6.12 | 105 | 5.92 | 64 | 6.00 | 80 |
| 4 | 6.44 | 192 | 7.25 | 470 | 13.83 | 6540 | 7.37 | 520 | 7.33 | 500 | 9.04 | 1400 | 8.14 | 860 | 8.71 | 1180 | 6.52 | 216 | 6.08 | 96 | 5.92 | 64 | 5.96 | 72 |
| 5 | 6.44 | 192 | 7.27 | 478 | 13.08 | 5560 | 7.83 | 705 | 7.25 | 470 | 8.79 | 1220 | 7.89 | 735 | 8.75 | 1200 | 6.54 | 222 | 6.12 | 105 | 5.92 | 64 | 5.96 | 72 |
| 6 | 6.54 | 222 | 7.21 | 454 | 12.87 | 5290 | 7.31 | 495 | 7.25 | 470 | 8.69 | 1130 | 7.50 | 570 | 8.58 | 1100 | 6.37 | 173 | 6.02 | 84 | 5.92 | 64 | 5.96 | 72 |
| 7 | 6.37 | 173 | 7.10 | 410 | 11.75 | 3940 | 7.42 | 490 | 7.33 | 500 | 8.33 | 955 | 7.29 | 485 | 8.42 | 1000 | 6.39 | 177 | 6.08 | 96 | 5.92 | 64 | 5.96 | 72 |
| 8 | 6.33 | 163 | 7.08 | 403 | 10.25 | 2360 | 8.08 | 490 | 7.46 | 553 | 8.12 | 850 | 7.33 | 500 | 11.06 | 3170 | 6.25 | 137 | 6.12 | 105 | 6.17 | 118 | 6.00 | 80 |
| 9 | 6.33 | 163 | 7.08 | 403 | 9.37 | 1630 | 9.12 | 490 | 7.58 | 600 | 7.85 | 715 | 7.67 | 640 | 10.67 | 2770 | 6.31 | 158 | 6.12 | 105 | 6.08 | 96 | 5.83 | 50 |
| 10 | 6.42 | 186 | 7.00 | 375 | 9.00 | 1370 | 8.62 | 490 | 7.58 | 600 | 7.79 | 685 | 7.89 | 735 | 9.25 | 1540 | 6.25 | 137 | 6.00 | 80 | 6.06 | 92 | 6.04 | 88 |
| 11 | 6.42 | 186 | 7.12 | 418 | 9.00 | 1370 | 8.08 | 490 | 7.50 | 570 | 7.62 | 620 | 9.67 | 1870 | 8.83 | 1250 | 6.33 | 162 | 6.12 | 105 | 5.83 | 50 | 5.92 | 64 |
| 12 | 6.48 | 204 | 7.21 | 454 | 9.00 | 1370 | 8.08 | 490 | 7.50 | 570 | 8.00 | 790 | 8.75 | 1200 | 8.56 | 1090 | 6.31 | 158 | 6.14 | 110 | 5.96 | 72 | 5.92 | 64 |
| 13 | 6.54 | 222 | 7.37 | 520 | 11.58 | 3740 | 8.08 | 490 | 7.54 | 585 | 8.98 | 1360 | 8.02 | 800 | 8.12 | 850 | 6.29 | 147 | 6.17 | 117 | 5.92 | 64 | 6.00 | 80 |
| 14 | 6.39 | 177 | 7.31 | 494 | 10.79 | 2890 | 8.08 | 490 | 7.62 | 620 | 10.12 | 2250 | 7.52 | 580 | 7.71 | 655 | 6.29 | 147 | 5.96 | 72 | 5.92 | 64 | 6.25 | 137 |
| 15 | 6.46 | 198 | 7.25 | 470 | 9.75 | 1930 | 8.08 | 490 | 7.50 | 570 | 10.25 | 2360 | 9.25 | 1540 | 7.37 | 520 | 6.23 | 132 | 6.10 | 100 | 5.92 | 64 | 6.25 | 137 |
| 16 | 6.40 | 180 | 7.17 | 438 | 8.71 | 1180 | 8.08 | 490 | 7.52 | 580 | 9.29 | 1570 | 10.37 | 2470 | 7.35 | 510 | 6.25 | 137 | 6.04 | 88 | 5.92 | 64 | 6.19 | 122 |
| 17 | 6.42 | 186 | 7.21 | 454 | 7.54 | 585 | 8.08 | 490 | 7.50 | 570 | 9.29 | 1570 | 10.77 | 2870 | 7.62 | 620 | 6.23 | 132 | 6.10 | 100 | 5.96 | 72 | 6.23 | 132 |
| 18 | 6.37 | 173 | 7.50 | 570 | 7.50 | 570 | 8.08 | 490 | 7.42 | 540 | 9.75 | 1930 | 9.67 | 1870 | 7.71 | 655 | 6.29 | 147 | 5.94 | 68 | 5.83 | 50 | 6.08 | 96 |
| 19 | 7.71 | 655 | 7.83 | 705 | 7.37 | 520 | 8.08 | 490 | 7.42 | 540 | 8.87 | 1280 | 8.87 | 1280 | 7.81 | 695 | 6.17 | 117 | 6.00 | 80 | 5.92 | 64 | 6.23 | 132 |
| 20 | 8.62 | 1120 | 7.81 | 695 | 7.42 | 540 | 7.96 | 490 | 7.33 | 500 | 8.29 | 935 | 8.44 | 1010 | 7.54 | 585 | 6.25 | 137 | 6.06 | 92 | 5.92 | 64 | 6.50 | 210 |
| 21 | 8.75 | 1200 | 7.67 | 640 | 7.67 | 570 | 7.79 | 490 | 7.42 | 540 | 8.27 | 925 | 8.12 | 850 | 7.33 | 500 | 6.23 | 132 | 5.89 | 58 | 5.92 | 64 | 6.69 | 267 |
| 22 | 8.42 | 1000 | 7.58 | 600 | 10.50 | 1370 | 7.75 | 490 | 7.37 | 520 | 8.17 | 875 | 7.89 | 735 | 7.23 | 462 | 6.25 | 137 | 6.00 | 80 | 5.92 | 64 | 6.54 | 222 |
| 23 | 8.17 | 875 | 7.58 | 600 | 10.29 | 1440 | 7.75 | 490 | 7.35 | 510 | 8.08 | 830 | 10.94 | 3040 | 7.00 | 375 | 6.12 | 105 | 5.98 | 76 | 5.92 | 64 | 6.35 | 167 |
| 24 | 7.75 | 670 | 7.71 | 655 | 9.75 | 1440 | 7.62 | 490 | 7.33 | 500 | 7.94 | 760 | 9.52 | 1750 | 7.06 | 396 | 6.12 | 105 | 6.04 | 88 | 5.92 | 64 | 6.39 | 177 |
| 25 | 7.56 | 595 | 7.64 | 625 | 9.33 | 1440 | 7.58 | 490 | 7.44 | 545 | 7.77 | 680 | 8.85 | 1260 | 7.23 | 462 | 6.27 | 142 | 6.08 | 96 | 5.81 | 47 | 6.31 | 157 |
| 26 | 7.50 | 570 | 7.54 | 585 | 9.12 | 1440 | 7.46 | 490 | 8.87 | 1280 | 7.89 | 735 | 8.02 | 800 | 7.14 | 426 | 6.17 | 117 | 5.92 | 64 | 5.92 | 64 | 6.21 | 127 |
| 27 | 7.83 | 705 | 7.94 | 760 | 9.42 | 1670 | 7.31 | 495 | 10.54 | 2640 | 8.04 | 810 | 7.46 | 655 | 7.44 | 545 | 6.08 | 96 | 6.00 | 80 | 5.92 | 64 | 6.12 | 105 |
| 28 | 8.42 | 1000 | 7.79 | 685 | 11.58 | 3740 | 7.25 | 470 | 13.67 | 6330 | 8.89 | 1290 | 8.19 | 885 | 6.89 | 337 | 6.04 | 88 | 5.87 | 55 | 5.92 | 64 | 6.10 | 100 |
| 29 | 8.54 | 1070 | 7.67 | 640 | 10.08 | 2210 | 7.42 | 540 | 13.04 | 5510 | 7.69 | 645 | 8.08 | 830 | 6.75 | 288 | 6.04 | 88 | 6.00 | 80 | 6.25 | 138 | 6.12 | 105 |
| 30 | 8.69 | 1160 | 7.50 | 570 | 9.33 | 1600 | ..... | ..... | 12.25 | 4540 | 7.37 | 520 | 9.98 | 2120 | 6.71 | 280 | 6.08 | 96 | 5.96 | 72 | 6.29 | 148 | 6.00 | 80 |
| 31 | ..... | ..... | 7.83 | 705 | 11.67 | 3840 | ..... | ..... | 11.29 | 3420 | ..... | .... | 11.02 | 3120 | ..... | .... | 5.96 | 72 | 6.00 | 80 | ..... | .... | 6.10 | 100 |

## Monthly Discharge of Thames River (South Branch) near Ealing for 1915-6

Drainage Area 515 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915). | 1,200 | 163 | 468 | 2.33 | .32 | .91 | 1.02 |
| December " | 955 | 375 | 565 | 1.85 | .73 | 1.10 | 1.27 |
| January (1916). | 6,540 | 520 | 2,140 | 12.70 | 1.01 | 4.16 | 4.80 |
| February | 4,540 | 470 | 719 | 8.82 | .91 | 1.40 | 1.51 |
| March | 6,330 | 470 | 1,198 | 12.29 | .91 | 2.33 | 2.69 |
| April | 2,890 | 520 | 1,233 | 5.61 | 1.01 | 2.39 | 2.67 |
| May | 3,120 | 455 | 1,212 | 6.06 | .88 | 2.35 | 2.71 |
| June | 3,170 | 280 | 933 | 6.16 | .54 | 1.81 | 2.02 |
| July | 246 | 72 | 145 | .48 | .14 | .28 | .32 |
| August | 105 | 55 | 124 | .20 | .11 | .24 | .28 |
| September | 148 | 50 | 72 | .29 | .10 | .14 | .16 |
| October | 267 | 64 | 115 | .52 | .12 | .22 | .25 |
| The year | 6,540 | 50 | 745 | 12.70 | .10 | 1.45 | 19.74 |

## Regular Stations

### SOUTH-WESTERN ONTARIO DISTRICT

#### Grand River and Tributaries

| River | Location | Drainage Area Sq. Miles | Township | County or District |
|---|---|---|---|---|
| Grand | at Belwood | 280 | Garafraxa | Wellington Co. |
| " | at Brantford | 2,000 | Brantford | Brant Co. |
| " | near Conestogo | 550 | Woolwich | Waterloo Co. |
| " | at Galt | 1,360 | North Dumfries | " |
| " | at Glen Morris | 1,390 | South Dumfries | Brant Co |
| " | at York | 2,280 | Oneida | Haldimand Co. |
| Boston Creek | near York | 125 | " | " |
| Conestogo | at St. Jacob's | 305 | Woolwich | Waterloo Co. |
| Fairchild's Creek | near Onondaga | 115 | Onondaga | Brant Co. |
| Galt Creek | at Galt | 45 | North Dumfries | Waterloo Co |
| Irvine | near Salem | 67 | Nichol | Wellington Co. |
| Nith | near Canning | 365 | Blenheim | Oxford Co |
| Speed | near Guelph | 77 | Guelph | Wellington Co |
| " | at Hespeler, | 250 | Waterloo | Waterloo Co. |
| Whiteman's Creek | near Burford | 154 | Brantford | Brant Co. |

## Grand River at Belwood

Location—At the bridge in the Village of Belwood, on the 7th concession, Township of Garafraxa, County of Wellington.

Records Available—August 31, 1913, to October 31, 1916.

Drainage Area—280 square miles.

Gauge—Vertical steel staff 0 to 12 feet on right abutment. Elevation of zero on gauge is 1366.00, which has remained unchanged since established.

Channel and Control—The channel is straight for about 400 feet above and 600 feet below gauging section. The channel bed at the bridge is solid rock, and permanent at all stages. At the permanent low water section, however, the channel is shifting under high water conditions.

Winter Flow—During the winter months the relation of gauge height to discharge is greatly affected by ice, and readings are taken to determine the winter discharge.

Accuracy—The river stage at this section is not affected by any power plants above or below. The rating curve is well defined, and estimates are considered good.

Observer—Lloyd Mosure, Belwood P.O.

### Discharge Measurements of Grand River at Belwood in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 9.... | Cunnington G... | 65 | 43 | 1.69 | 1,367.29 | 73 | ..... |
| 1916 | | | | | | | |
| Feb. 3.... | Roberts E. .... | 110 | 552 | 1.90 | 1,369.00 | 1,050 (a) | ..... |
| " 18.... | " .... | 95 | 59 | 1.16 | 1,367.82 | 69 (b) | ..... |
| Mar. 30.... | Cunnington G... | 110 | 718 | 3.73 | 1,370.50 | 2,680 | ..... |
| " 30.... | " ... | 110 | 718 | 3.70 | 1,370.44 | 2,646 | ..... |
| Apr. 1.... | " ... | 110 | 806 | 5.57 | 1,371.33 | 4,487 | ..... |
| " 1.... | " ... | 110 | 806 | 5.84 | 1,371.33 | 4,708 | ..... |
| May 9.... | Roberts E .... | 110 | 410 | .60 | 1,367.76 | 246 | ..... |
| Oct. 6.... | " .... | 63 | 14 | .38 | 1,366.83 | 5 | ..... |

(a) Slush and ice in stream; section has been scoured by freshets.
(b) Ice on control.

# Daily Gauge Height and Discharge of Grand River at Belwood for 1915-6

Drainage Area, 280 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1367.33 | 72 | 1368.16 | 444 | 1367.98 | 145 | 1369.87 | 1960 | 1367.46 | 55 | 1371.42 | 4910 | 1367.67 | 205 | 1367.83 | 293 | 1367.17 | 25 | 1366.83 | 5 | 1366.75 | 2 | 1366.85 | 6 |
| 2 | 1367.29 | 62 | 1368.08 | 393 | 1368.17 | 155 | 1368.96 | 1070 | 1367.50 | 55 | 1370.46 | 2650 | 1367.87 | 317 | 1367.62 | 180 | 1367.10 | 15 | 1366.83 | 5 | 1366.81 | 4 | 1366.83 | 5 |
| 3 | 1367.29 | 62 | 1367.87 | 275 | 1368.21 | 175 | 1368.42 | 680 | 1367.50 | 55 | 1370.17 | 2300 | 1368.12 | 474 | 1367.67 | 205 | 1367.12 | 18 | 1366.83 | 5 | 1366.79 | 4 | 1366.83 | 5 |
| 4 | 1367.29 | 62 | 1367.83 | 255 | 1368.14 | 218 | 1368.42 | 530 | 1367.50 | 55 | 1369.58 | 1640 | 1368.50 | 740 | 1367.58 | 160 | 1367.08 | 14 | 1366.83 | 5 | 1366.79 | 4 | 1366.83 | 5 |
| 5 | 1367.33 | 72 | 1367.83 | 255 | 1368.42 | 290 | 1368.42 | 395 | 1367.50 | 55 | 1369.37 | 1430 | 1368.00 | 395 | 1367.58 | 160 | 1367.08 | 14 | 1366.83 | 5 | 1366.75 | 2 | 1366.83 | 5 |
| 6 | 1367.33 | 72 | 1367.58 | 147 | 1369.33 | 860 | 1368.37 | 365 | 1367.50 | 55 | 1369.14 | 1230 | 1367.75 | 248 | 1367.50 | 120 | 1367.04 | 13 | 1366.83 | 5 | 1366.75 | 2 | 1266.83 | 5 |
| 7 | 1367.31 | 68 | 1367.58 | 147 | 1369.96 | 1250 | 1368.12 | 305 | 1367.54 | 70 | 1369.00 | 1100 | 1367.50 | 120 | 1367.39 | 82 | 1367.02 | 12 | 1366.83 | 5 | 1366.75 | 2 | 1366.83 | 5 |
| 8 | 1367.29 | 62 | 1367.58 | 147 | 1369.62 | 1185 | 1368.08 | 275 | 1367.58 | 85 | 1368.83 | 970 | 1367.54 | 140 | 1367.42 | 92 | 1367.00 | 11 | 1366.83 | 5 | 1366.75 | 2 | 1366.83 | 5 |
| 9 | 1367.31 | 68 | 1367.46 | 108 | 1369.31 | 1120 | 1368.08 | 248 | 1367.58 | 85 | 1368.54 | 770 | 1367.71 | 225 | 1367.42 | 92 | 1367.00 | 11 | 1366.83 | 5 | 1366.79 | 2 | 1366.89 | 7 |
| 10 | 1367.29 | 62 | 1367.46 | 108 | 1369.25 | 990 | 1368.08 | 248 | 1367.54 | 55 | 1368.50 | 740 | 1367.71 | 225 | 1367.35 | 70 | 1366.96 | 9 | 1366.83 | 5 | 1366.77 | 2 | 1366.92 | 8 |
| 11 | 1367.33 | 72 | 1367.67 | 105 | 1369.25 | 890 | 1368.00 | 220 | 1367.50 | 55 | 1368.83 | 970 | 1368.04 | 421 | 1367.60 | 170 | 1366.96 | 9 | 1366.83 | 5 | 1366.75 | 2 | 1366.87 | 6 |
| 12 | 1367.33 | 72 | 1367.58 | 102 | 1369.17 | 665 | 1368.00 | 220 | 1367.50 | 55 | 1369.00 | 1100 | 1367.83 | 293 | 1367.60 | 170 | 1366.92 | 8 | 1366.83 | 5 | 1366.75 | 2 | 1366.92 | 8 |
| 13 | 1367.31 | 68 | 1367.58 | 96 | 1369.79 | 990 | 1367.92 | 170 | 1367.54 | 55 | 1369.87 | 1960 | 1367.60 | 170 | 1367.54 | 140 | 1366.92 | 8 | 1366.83 | 5 | 1366.75 | 2 | 1366.96 | 9 |
| 14 | 1367.33 | 72 | 1367.58 | 90 | 1369.75 | 960 | 1367.87 | 70 | 1367.50 | 55 | 1370.75 | 3110 | 1367.46 | 106 | 1367.42 | 92 | 1366.92 | 8 | 1366.79 | 4 | 1366.75 | 2 | 1367.00 | 11 |
| 15 | 1367.29 | 62 | 1367.62 | 105 | 1369.37 | 795 | 1367.87 | 85 | 1367.58 | 85 | 1370.08 | 2200 | 1367.56 | 150 | 1367.42 | 92 | 1366.87 | 6 | 1366.79 | 4 | 1366.75 | 2 | 1366.96 | 9 |
| 16 | 1367.29 | 62 | 1367.67 | 105 | 1369.21 | 600 | 1367.75 | 85 | 1367.58 | 85 | 1369.42 | 1480 | 1367.67 | 205 | 1368.00 | 395 | 1366.92 | 8 | 1366.75 | 2 | 1366.75 | 2 | 1366.96 | 9 |
| 17 | 1367.29 | 62 | 1367.67 | 120 | 1369.08 | 535 | 1367.79 | 85 | 1367.58 | 85 | 1369.75 | 1820 | 1367.77 | 258 | 1368.25 | 565 | 1366.96 | 9 | 1366.75 | 2 | 1366.77 | 2 | 1366.94 | 9 |
| 18 | 1367.33 | 72 | 1367.69 | 120 | 1368.87 | 438 | 1367.83 | 85 | 1367.50 | 85 | 1369.50 | 1550 | 1367.69 | 215 | 1368.21 | 535 | 1366.92 | 8 | 1366.75 | 2 | 1366.77 | 2 | 1366.92 | 8 |
| 19 | 1367.96 | 323 | 1367.69 | 120 | 1368.75 | 345 | 1367.77 | 85 | 1367.50 | 55 | 1369.17 | 1250 | 1367.58 | 160 | 1368.04 | 421 | 1366.92 | 8 | 1366.75 | 2 | 1366.75 | 2 | 1367.02 | 12 |
| 20 | 1368.54 | 690 | 1367.67 | 111 | 1368.67 | 318 | 1367.79 | 85 | 1367.50 | 55 | 1370.08 | 2200 | 1367.54 | 140 | 1367.81 | 281 | 1366.94 | 9 | 1366.75 | 2 | 1366.75 | 2 | 1367.12 | 18 |
| 21 | 1368.08 | 393 | 1367.75 | 127 | 1368.62 | 195 | 1367.75 | 85 | 1367.50 | 55 | 1369.54 | 1590 | 1367.44 | 99 | 1367.58 | 160 | 1367.17 | 25 | 1366.75 | 2 | 1366.79 | 2 | 1367.12 | 18 |
| 22 | 1367.87 | 275 | 1367.75 | 145 | 1371.67 | 3020 | 1367.75 | 85 | 1367.50 | 55 | 1371.37 | 4740 | 1367.39 | 82 | 1367.60 | 170 | 1367.06 | 13 | 1366.77 | 3 | 1366.83 | 5 | 1367.12 | 18 |
| 23 | 1367.67 | 183 | 1367.75 | 145 | 1370.33 | 1770 | 1367.62 | 85 | 1367.50 | 55 | 1370.46 | 2650 | 1367.73 | 236 | 1367.42 | 92 | 1367.00 | 11 | 1366.79 | 4 | 1366.83 | 5 | 1367.08 | 14 |
| 24 | 1367.71 | 200 | 1367.75 | 145 | 1369.71 | 1280 | 1367.75 | 85 | 1367.50 | 61 | 1369.37 | 1430 | 1367.62 | 180 | 1367.37 | 76 | 1367.00 | 11 | 1366.79 | 4 | 1366.83 | 5 | 1366.96 | 9 |
| 25 | 1367.75 | 217 | 1367.75 | 145 | 1369.12 | 1020 | 1367.62 | 85 | 1367.54 | 102 | 1369.19 | 1270 | 1367.54 | 140 | 1367.50 | 120 | 1366.96 | 9 | 1366.83 | 5 | 1366.83 | 5 | 1366.94 | 9 |
| 26 | 1368.83 | 880 | 1367.75 | 145 | 1369.33 | 1400 | 1367.67 | 70 | 1367.79 | 270 | 1369.21 | 1290 | 1367.35 | 70 | 1367.42 | 92 | 1366.92 | 8 | 1366.83 | 5 | 1366.83 | 5 | 1366.92 | 8 |
| 27 | 1369.08 | 1040 | 1367.79 | 145 | 1370.42 | 2600 | 1367.50 | 55 | 1368.31 | 605 | 1369.00 | 1100 | 1367.50 | 120 | 1367.33 | 64 | 1366.92 | 8 | 1366.82 | 5 | 1366.83 | 5 | 1366.92 | 8 |
| 28 | 1369.06 | 1030 | 1367.81 | 145 | 1371.50 | 5200 | 1367.58 | 55 | 1369.04 | 1140 | 1368.83 | 970 | 1368.87 | 1000 | 1367.25 | 42 | 1366.89 | 7 | 1366.80 | 4 | 1366.85 | 6 | 1366.92 | 8 |
| 29 | 1368.46 | 640 | 1367.83 | 145 | 1369.25 | 1320 | 1367.58 | 55 | 1370.46 | 2650 | 1368.65 | 845 | 1368.17 | 510 | 1367.25 | 42 | 1366.83 | 5 | 1366.75 | 2 | 1366.96 | 9 | 1366.92 | 8 |
| 30 | 1367.62 | 163 | 1367.83 | 145 | 1369.17 | 1250 | ..... | .... | 1371.37 | 4740 | 1368.58 | 795 | 1368.50 | 740 | 1367.25 | 42 | 1366.83 | 5 | 1366.75 | 2 | 1366.92 | 8 | 1366.92 | 8 |
| 31 | ..... | .... | 1367.83 | 145 | 1370.83 | 3270 | ..... | .... | 1371.46 | 5060 | ..... | .... | 1368.21 | 535 | ..... | .... | 1366.83 | 5 | 1366.75 | 2 | ..... | ..... | 1366.94 | 9 |

## Monthly Discharge of Grand River at Belwood for 1915-6

Drainage Area, 280 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November. (1915) | 1,040 | 62 | 241 | 3.71 | .22 | .86 | .96 |
| December. " | 444 | 90 | 159 | 1.59 | .32 | .57 | .66 |
| January .. (1916) | 5,200 | 145 | 1,137 | 18.57 | .52 | 4.06 | 4.68 |
| February ..... | 1,960 | 55 | 273 | 7.00 | .20 | .95 | 1.05 |
| March ..... | 5,060 | 55 | 520 | 18.07 | .20 | 1.86 | 2.14 |
| April ..... | 4,910 | 470 | 1,735 | 17.54 | 1.68 | 6.20 | 6.91 |
| May ..... | 1,000 | 70 | 288 | 3.57 | .25 | 1.03 | 1.19 |
| June ..... | 565 | 42 | 174 | 2.02 | .15 | .62 | .69 |
| July ..... | 25 | 5 | 11 | .09 | .02 | .04 | .05 |
| August ..... | 5 | 2 | 4 | .02 | .01 | .01 | .01 |
| September ..... | 9 | 2 | 3 | .03 | .01 | .01 | .01 |
| October ..... | 18 | 5 | 9 | .06 | .02 | .03 | .03 |
| The year ..... | 5,200 | 2 | 378 | 18.57 | .01 | 1.35 | 18.38 |

## Grand River at Brantford

Location—At the Toronto-Hamilton-Brantford Railway bridge in the City of Brantford, County of Brant.

Records Available—Discharge measurements from August, 1912, to October 31, 1916. Daily gauge heights from July 8, 1913, to October 31, 1916.

Drainage Area—2,000 square miles.

Gauge—Vertical steel staff, 0 to 12 feet on left abutment. Elevation of zero on gauge is 643.00, which has remained unchanged since established.

Channel and Control—The bed is not shifting under ordinary conditions. The channel above has been narrowed considerably by the building of the Lake Erie & Northern Railway right-of-way. Directly below section a bridge for this same railway is now built that has four piers, the back water from which is quite apparent. During the freshet, ice is liable to jam at this point. During the spring floods of 1916, the bed of stream scoured, so that former curve at low gauge heights is applicable.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice, and measurements are made to determine the winter flow.

Regulation—The Western Counties Electric Company have a dam 1,000 feet above this section that causes fluctuations that are noticeable in the river stage. Their plant is running at its full capacity. The observed mean gauge height does not give the correct mean daily stage.

Diversions—The Western Counties Electric Company use about 50 second feet for power purposes at times.

Accuracy—With the exception of a slight angle at section these records can be classified as good. The back water caused through the construction work of the Lake Erie & Northern Railway bridge, 150 feet below this section, necessitated the use of more than one curve.

Observer—John Anguish, Brantford.

## Discharge Measurement of Grand River at Brantford in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 3.... | Yeates, W .... | 341 | 960 | .81 | 645.18 | 779 (a) | ..... |
| Dec. 29.... | " .... | 341 | 1,040 | .86 | 645.59 | 897 (b) | ..... |
| 1916 | | | | | | | |
| Jan. 3.... | Roberts, E .... | 364 | 1,264 | 1.35 | 646.21 | 1,707 (c) | ..... |
| " 29.... | " .... | 373 | 3,383 | 3.19 | 651.64 | 10,788 (d) | ..... |
| Feb. 1.... | Yeates, W. .... | 373 | 3,756 | 4.82 | 652.77 | 18,100 (e) | ..... |
| " 16.... | Roberts, E. .... | 359 | 1,203 | .89 | 646.08 | 1,071 (f) | ..... |
| " 21.... | " .... | 278 | 834 | .77 | 645.08 | 638 (g) | ..... |
| Mar. 2.... | " .... | 278 | 842 | .79 | 645.35 | 670 (h) | ..... |
| " 8.... | Yeates, W. .... | 278 | 816 | .95 | 645.40 | 778 (f) | ..... |
| " 13.... | " .... | 278 | 771 | .99 | 645.21 | 765 (f) | ..... |
| " 22.... | " .... | 278 | 761 | .94 | 645.21 | 721 (h) | ..... |
| " 23.... | " .... | 278 | 761 | .93 | 645.19 | 719 (h) | ..... |
| " 24.... | " .... | 278 | 782 | .97 | 645.31 | 768 (h) | ..... |
| " 25.... | " .... | 278 | 782 | .96 | 645.26 | 651 (i) | ..... |
| June 19.... | " .... | 371 | 1,721 | 2.16 | 646.88 | 3,711 (j) | ..... |
| " 20.... | " .... | 366 | 1,646 | 1.96 | 646.65 | 3,226 (j) | ..... |
| " 21.... | " .... | 364 | 1,501 | 1.81 | 646.33 | 2,712 (j) | ..... |
| " 22.... | " .... | 364 | 1,391 | 1.49 | 646.00 | 2,076 | ..... |
| " 23.... | " .... | 363 | 1,355 | 1.32 | 645.87 | 1,782 | ..... |
| " 26.... | " .... | 365 | 1,574 | 1.84 | 646.50 | 2,889 | ..... |
| " 27.... | " .... | 364 | 1,428 | 1.57 | 646.08 | 2,244 | ..... |
| " 28.... | " .... | 363 | 1,283 | 1.23 | 645.70 | 1,576 | ..... |
| " 29.... | " .... | 361 | 1,173 | 1.14 | 645.43 | 1,346 | ..... |
| " 30.... | " .... | 361 | 1,210 | 1.21 | 645.49 | 1,466 | ..... |
| Aug. 5.... | " .... | 306 | 908 | .48 | 644.58 | 433 | ..... |
| " 7.... | " .... | 366 | 908 | .61 | 644.64 | 453 | ..... |
| Sept. 7.... | " .... | 288 | 877 | .52 | 644.50 | 556 | ..... |
| " 8.... | " .... | 290 | 869 | .47 | 644.48 | 405 | ..... |
| " 11.... | " .... | 307 | 906 | .54 | 644.60 | 494 | ..... |
| " 12.... | " .... | 273 | 780 | .31 | 644.17 | 244 | ..... |
| " 13.... | " .... | 246 | 756 | .24 | 644.04 | 178 | ..... |
| " 15.... | " .... | 288 | 877 | .47 | 644.48 | 415 | ..... |
| " 19.... | " .... | 288 | 877 | .50 | 644.50 | 438 | ..... |
| " 28.... | " .... | 219 | 703 | .16 | 643.87 | 110 | ..... |
| " 29.... | " .... | 278 | 840 | .38 | 644.31 | 319 | ..... |

From 7 p.m. to 7 a.m. the only water passing this section is leakage from the dams above during low-water periods.

(a) Construction work below section.
(b) Ice above, control clear.
(c) Ice on section and control.
(d) Ice jams forming and breaking.
(e) New piers completed below section.
(f) Ice on section and control.
(g) Thin ice on control.
(h) Ice on control.
(i) Thawing—ice effect diminishing.
(j) Section scouring.

## Daily Gauge Height and Discharge of Grand River at Brantford for 1915-6

Drainage Area, 2,000 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge | Gauge Ht. | Dis-charge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 645.04 | 725 | 647.17 | 3520 | 645.48 | 1150 | 652.54 | 17330 | 645.25 | 600 | 651.96 | 15480 | 646.31 | 2560 | 648.04 | 5790 | 645.21 | 1080 | 644.44 | 408 | 644.35 | 345 | 644.52 | 465 |
| 2 | 645.00 | 790 | 646.50 | 2480 | 645.64 | 1350 | 649.21 | 7820 | 645.14 | 520 | 651.54 | 14170 | 646.17 | 2330 | 646.96 | 3680 | 645.14 | 1000 | 644.50 | 450 | 644.39 | 373 | 644.56 | 495 |
| 3 | 645.04 | 725 | 646.21 | 2040 | 646.04 | 1790 | 647.37 | 3880 | 645.17 | 560 | 649.79 | 9280 | 646.54 | 2940 | 647.79 | 2580 | 645.08 | 945 | 644.48 | 436 | 644.37 | 359 | 644.37 | 359 |
| 4 | 645.08 | 760 | 645.96 | 1690 | 646.60 | 2630 | 645.96 | 1690 | 645.27 | 600 | 649.04 | 7420 | 647.06 | 3860 | 648.33 | 6440 | 645.00 | 865 | 644.46 | 422 | 644.31 | 317 | 644.39 | 373 |
| 5 | 644.96 | 655 | 645.77 | 1460 | 647.17 | 3520 | 645.79 | 1490 | 645.21 | 600 | 648.08 | 5260 | 647.10 | 3920 | 647.33 | 4360 | 644.81 | 685 | 644.42 | 394 | 644.62 | 540 | 644.44 | 408 |
| 6 | 645.08 | 760 | 645.69 | 1370 | 648.48 | 6130 | 645.75 | 1440 | 645.33 | 690 | 647.75 | 4600 | 646.62 | 3090 | 647.21 | 4130 | 644.79 | 670 | 644.39 | 373 | 644.42 | 394 | 644.44 | 408 |
| 7 | 645.17 | 845 | 645.62 | 1290 | 649.37 | 8225 | 645.46 | 1130 | 645.29 | 690 | 647.31 | 3770 | 646.25 | 2460 | 646.73 | 3280 | 644.75 | 635 | 644.42 | 394 | 644.39 | 373 | 644.37 | 359 |
| 8 | 645.12 | 800 | 645.52 | 1190 | 648.37 | 5880 | 645.37 | 1040 | 645.33 | 735 | 646.75 | 2860 | 646.08 | 2200 | 646.71 | 3240 | 644.75 | 635 | 644.46 | 422 | 644.29 | 304 | 644.29 | 304 |
| 9 | 645.12 | 800 | 645.44 | 1110 | 647.46 | 4040 | 645.42 | 1020 | 645.29 | 690 | 646.54 | 2540 | 646.14 | 2290 | 647.12 | 3960 | 644.75 | 635 | 644.42 | 394 | 644.02 | 163 | 644.25 | 278 |
| 10 | 645.17 | 845 | 645.17 | 840 | 647.17 | 3520 | 645.58 | 1020 | 645.17 | 620 | 646.29 | 2160 | 646.23 | 2430 | 648.08 | 5880 | 644.79 | 670 | 644.50 | 450 | 644.06 | 179 | 644.31 | 317 |
| 11 | 644.87 | 575 | 645.10 | 780 | 647.00 | 3230 | 645.71 | 1120 | 645.12 | 560 | 646.25 | 2100 | 646.50 | 2880 | 647.92 | 5540 | 644.77 | 650 | 644.50 | 450 | 644.29 | 304 | 644.33 | 331 |
| 12 | 644.94 | 635 | 645.06 | 745 | 647.04 | 3300 | 645.75 | 1170 | 645.21 | 600 | 646.56 | 2570 | 646.75 | 3310 | 647.44 | 4580 | 644.71 | 610 | 644.50 | 450 | 644.23 | 264 | 644.33 | 331 |
| 13 | 644.92 | 620 | 645.12 | 735 | 647.54 | 4200 | 645.71 | 1120 | 645.29 | 760 | 647.87 | 4840 | 646.21 | 2400 | 647.08 | 3890 | 644.71 | 610 | 644.35 | 345 | 644.17 | 230 | 644.42 | 394 |
| 14 | 644.92 | 620 | 645.35 | 780 | 649.17 | 6170 | 645.67 | 1070 | 645.31 | 780 | 650.37 | 10820 | 645.87 | 1900 | 646.50 | 2880 | 644.79 | 670 | 644.48 | 436 | 644.25 | 278 | 644.44 | 408 |
| 15 | 664.96 | 655 | 645.21 | 710 | 651.12 | 6170 | 645.58 | 1020 | 645.23 | 735 | 651.92 | 15350 | 646.17 | 2330 | 646.12 | 2260 | 644.56 | 495 | 644.46 | 422 | 644.17 | 230 | 644.44 | 408 |
| 16 | 644.96 | 655 | 645.08 | 710 | 654.08 | 7320 | 645.67 | 1020 | 645.25 | 690 | 649.33 | 8120 | 647.17 | 4050 | 646.62 | 3080 | 644.79 | 670 | 644.50 | 450 | 644.19 | 240 | 644.50 | 450 |
| 17 | 645.06 | 745 | 645.25 | 780 | 653.00 | 4700 | 645.71 | 1020 | 645.17 | 665 | 648.58 | 6350 | 647.17 | 4050 | 646.83 | 3450 | 644.83 | 720 | 644.48 | 436 | 644.02 | 163 | 644.39 | 373 |
| 18 | 644.98 | 670 | 645.17 | 780 | 652.42 | 2030 | 645.71 | 1020 | 645.25 | 710 | 649.21 | 7820 | 647.25 | 4200 | 647.21 | 4130 | 644.58 | 510 | 644.50 | 450 | 644.19 | 240 | 644.44 | 408 |
| 19 | 645.17 | 845 | 645.29 | 960 | 652.54 | 1500 | 645.79 | 1020 | 645.27 | 760 | 648.17 | 5450 | 646.75 | 3310 | 647.04 | 3820 | 644.62 | 540 | 644.54 | 480 | 644.25 | 278 | 644.56 | 495 |
| 20 | 646.29 | 2160 | 645.25 | 920 | 652.42 | 1170 | 645.71 | 1020 | 645.23 | 760 | 647.33 | 3800 | 646.33 | 2590 | 646.67 | 3170 | 644.62 | 540 | 644.54 | 480 | 644.12 | 205 | 644.79 | 670 |
| 21 | 647.50 | 4120 | 645.25 | 920 | 652.37 | 3230 | 645.54 | 1020 | 645.21 | 710 | 647.87 | 4840 | 646.17 | 2340 | 646.25 | 2460 | 644.58 | 510 | 644.52 | 465 | 644.39 | 373 | 645.02 | 885 |
| 22 | 646.79 | 2920 | 645.25 | 920 | 652.83 | 6170 | 645.58 | 1020 | 645.12 | 645 | 648.54 | 6260 | 646.08 | 2200 | 646.02 | 2100 | 644.56 | 495 | 644.58 | 510 | 644.37 | 359 | 645.04 | 905 |
| 23 | 646.25 | 2100 | 645.08 | 760 | 658.17 | 13450 | 645.44 | 890 | 645.29 | 690 | 651.29 | 13420 | 646.81 | 3420 | 645.75 | 1740 | 644.64 | 555 | 644.58 | 510 | 644.23 | 265 | 644.96 | 825 |
| 24 | 645.98 | 1720 | 645.14 | 815 | 654.42 | 9820 | 645.37 | 845 | 645.21 | 780 | 649.06 | 7460 | 647.25 | 4200 | 645.75 | 1740 | 644.79 | 670 | 644.58 | 510 | 644.02 | 163 | 644.85 | 720 |
| 25 | 645.92 | 1640 | 645.21 | 880 | 654.33 | 9820 | 645.33 | 780 | 645.23 | 870 | 647.81 | 4720 | 646.71 | 3240 | 645.87 | 1890 | 644.71 | 610 | 644.42 | 392 | 644.31 | 317 | 644.75 | 640 |
| 26 | 645.92 | 1640 | 645.12 | 800 | 652.87 | 12550 | 645.21 | 690 | 645.48 | 1150 | 647.64 | 4390 | 646.17 | 2340 | 646.42 | 2740 | 644.56 | 495 | 644.44 | 408 | 644.29 | 304 | 644.75 | 640 |
| 27 | 647.08 | 3370 | 645.17 | 845 | 651.29 | 13420 | 645.12 | 600 | 646.37 | 2280 | 648.33 | 5800 | 646.08 | 2200 | 646.04 | 2130 | 644.64 | 555 | 644.44 | 408 | 644.12 | 205 | 644.67 | 560 |
| 28 | 648.54 | 6260 | 645.29 | 960 | 653.33 | 19860 | 645.25 | 645 | 649.67 | 8980 | 647.92 | 4940 | 646.33 | 2590 | 645.62 | 1570 | 644.62 | 540 | 644.56 | 495 | 644.17 | 230 | 644.72 | 615 |
| 29 | 647.83 | 4750 | 645.44 | 1110 | 652.54 | 12550 | 645.33 | 790 | 654.33 | 23060 | 647.08 | 3370 | 646.73 | 3310 | 645.37 | 1280 | 644.60 | 525 | 644.48 | 436 | 644.46 | 422 | 644.56 | 495 |
| 30 | 647.96 | 5020 | 645.37 | 1040 | 649.17 | 7730 | ..... | ..... | 653.96 | 21870 | 646.58 | 2600 | 647.83 | 5360 | 645.25 | 1120 | 644.46 | 422 | 644.56 | 495 | 644.50 | 450 | 644.62 | 540 |
| 31 | ..... | ..... | 645.67 | 1350 | 650.00 | 9820 | ..... | ..... | 653.62 | 20780 | ..... | ..... | 649.96 | 10510 | ..... | ..... | 644.46 | 422 | 644.56 | 495 | ..... | ..... | 644.67 | 580 |

## Monthly Discharge of Grand River at Brantford for 1915-6

Drainage Area, 2,000 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile. | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915). | 6,260 | 620 | 1,645 | 3.13 | .31 | .82 | .91 |
| December " | 3,520 | 710 | 1,138 | 1.76 | .35 | .57 | .66 |
| January (1916). | 19,860 | 1,150 | 6,337 | 9.93 | .58 | 3.17 | 3.65 |
| February ..... | 17,330 | 600 | 1,918 | 8.66 | .30 | .96 | 1.04 |
| March ..... | 23,060 | 520 | 3,069 | 11.53 | .26 | 1.53 | 1.76 |
| April..... | 15,480 | 2,100 | 6,419 | 7.74 | 1.05 | 3.21 | 3.58 |
| May..... | 10,510 | 1,900 | 3,284 | 5.26 | .95 | 1.64 | 1.89 |
| June ..... | 6,440 | 1,120 | 3,387 | 3.22 | .56 | 1.69 | 1.89 |
| July ..... | 1,080 | 422 | 633 | .54 | .21 | .32 | .37 |
| August..... | 510 | 373 | 441 | .26 | .19 | .22 | .25 |
| September..... | 540 | 163 | 295 | .27 | .08 | .15 | .17 |
| October ..... | 905 | 278 | 498 | .46 | .14 | .25 | .29 |
| The year..... | 23,060 | 163 | 2,419 | 11.53 | .08 | 1.21 | 16.46 |

## Grand River near Conestogo

Location—At the highway bridge ¼ mile below the Village of Conestogo, Township of Woolwich, County of Waterloo.

Records Available—July 16, 1913, to October 31, 1916.

Drainage Area—550 square miles.

Gauge—Vertical steel staff 0 to 12 feet on the centre pier of bridge. Elevation of zero is 1017.00 feet.

Channel and Control—The channel is straight for about 300 feet above and below the gauging section. The banks are low and liable to overflow. The bed is composed of gravel, and all the water is confined between the abutments of the bridge, except at a very serious flood. In flood stages the banks and bed are liable to shift.

Discharge Measurements—Made from the bridge during high water, and at a permanent low water section located 600 feet upstream during the low water period.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter season, and measurements are made to determine the winter flow.

Accuracy—The slight shifting of the channel has little affect. The rating curve is well defined, and records are good.

Observer—E. Schinbein, Conestogo.

### Discharge Measurements of Grand River near Conestogo in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 10.... | Roberts, E. .... | 130 | 107 | 1.37 | 1,018.42 | 147 | ..... |
| 1916 | | | | | | | |
| Jan. 7.... | " .... | 238 | 662 | 2.33 | 1,020.60 | 1,539(a) | ..... |
| " 26.... | Cunnington, G.. | 247 | 712 | 2.44 | 1,020.83 | 1,735(b) | ..... |
| Feb. 2.... | Roberts, E..... | 235 | 612 | 2.25 | 1,020.43 | 1,378(c) | ..... |
| " 19.... | " .... | 135 | 156 | 1.10 | 1,019.00 | 173(d) | ..... |
| Mar. 21.... | Cunnington, G.. | 266 | 1,349 | 4.03 | 1,023.33 | 5,439 | ..... |
| Apr. 4.... | " .. | 248 | 809 | 3.00 | 1,021.17 | 2,430 | ..... |
| " 4.... | " .. | 248 | 809 | 2.97 | 1,021.17 | 2,401 | ..... |
| " 4.... | " .. | 248 | 809 | 2.96 | 1,021.17 | 2,397 | ..... |
| May 9.... | Roberts, E..... | 182 | 356 | 1.79 | 1,019.25 | 634 | ..... |
| Oct. 6.... | " .... | 118 | 45 | .60 | 1,017.77 | 27 | ..... |

(a) Anchor ice at section.
(b) Ice at both sides of section.
(c) Slush at section and ice at left side.
(d) Measurement not taken at regular section; ice at gauge.

# Daily Gauge Height and Discharge of Grand River near Conestogo for 1915-6

Drainage Area, 550 Square Miles

| Day | November | | December | | January- | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1018.39 | 147 | 1019.85 | 1060 | 1018.96 | 335 | 1022.04 | 3290 | 1018.87 | 150 | 1024.29 | 6990 | 1019.25 | 575 | 1019.58 | 835 | 1018.46 | 168 | 1017.94 | 49 | 1017.67 | 18 | 1017.89 | 42 |
| 2 | 1018.37 | 142 | 1019.48 | 755 | 1019.31 | 470 | 1020.54 | 1500 | 1018.87 | 150 | 1022.33 | 4010 | 1019.75 | 975 | 1019.64 | 880 | 1018.50 | 180 | 1017.81 | 32 | 1017.71 | 22 | 1017.85 | 37 |
| 3 | 1018.31 | 125 | 1019.31 | 620 | 1019.52 | 610 | 1019.96 | 975 | 1018.77 | 110 | 1022.08 | 3660 | 1020.04 | 1240 | 1020.92 | 2180 | 1018.42 | 156 | 1017.77 | 28 | 1017.75 | 26 | 1017.89 | 42 |
| 4 | 1018.33 | 130 | 1019.12 | 485 | 1019.60 | 690 | 1019.46 | 505 | 1018.79 | 110 | 1021.46 | 2850 | 1020.37 | 1570 | 1019.67 | 905 | 1018.33 | 130 | 1017.77 | 28 | 1017.75 | 26 | 1017.79 | 30 |
| 5 | 1018.31 | 125 | 1018.98 | 400 | 1021.17 | 2160 | 1018.96 | 260 | 1018.71 | 97 | 1020.89 | 2150 | 1019.87 | 1080 | 1020.18 | 1280 | 1018.33 | 130 | 1017.75 | 26 | 1017.64 | 16 | 1017.81 | 32 |
| 6 | 1018.39 | 147 | 1019.00 | 410 | 1021.46 | 2520 | 1018.92 | 240 | 1018.77 | 122 | 1020.64 | 1850 | 1019.58 | 835 | 1019.54 | 800 | 1018.29 | 119 | 1017.71 | 22 | 1017.67 | 18 | 1017.79 | 30 |
| 7 | 1018.35 | 136 | 1018.96 | 390 | 1020.79 | 1790 | 1019.12 | 260 | 1018.87 | 150 | 1020.08 | 1280 | 1019.35 | 650 | 1019.12 | 484 | 1018.29 | 119 | 1017.69 | 20 | 1017.64 | 16 | 1017.81 | 32 |
| 8 | 1018.35 | 136 | 1018.94 | 380 | 1020.62 | 1550 | 1019.62 | 260 | 1018.96 | 180 | 1019.94 | 1150 | 1019.27 | 590 | 1019.54 | 800 | 1018.25 | 109 | 1017.75 | 26 | 1017.67 | 18 | 1017.71 | 22 |
| 9 | 1018.46 | 168 | 1018.79 | 305 | 1020.23 | 1110 | 1019.71 | 260 | 1018.98 | 180 | 1019.54 | 800 | 1019.48 | 755 | 1019.75 | 975 | 1018.08 | 71 | 1017.73 | 24 | 1017.67 | 18 | 1017.81 | 32 |
| 10 | 1018.44 | 162 | 1018.58 | 212 | 1019.83 | 850 | 1019.58 | 310 | 1019.08 | 220 | 1019.62 | 865 | 1019.58 | 835 | 1020.50 | 1700 | 1018.08 | 71 | 1017.73 | 24 | 1017.64 | 16 | 1017.67 | 18 |
| 11 | 1018.40 | 150 | 1018.50 | 180 | 1019.92 | 875 | 1019.58 | 360 | 1018.98 | 180 | 1019.83 | 1050 | 1019.37 | 665 | 1019.62 | 865 | 1017.94 | 49 | 1017.71 | 22 | 1017.62 | 14 | 1017.71 | 22 |
| 12 | 1018.42 | 156 | 1018.60 | 220 | 1020.02 | 975 | 1019.62 | 360 | 1018.79 | 122 | 1020.52 | 1720 | 1019.17 | 520 | 1019.48 | 755 | 1017.96 | 51 | 1017.71 | 22 | 1017.67 | 18 | 1017.71 | 22 |
| 13 | 1018.42 | 156 | 1018.62 | 228 | 1020.69 | 1600 | 1019.52 | 360 | 1019.08 | 220 | 1021.96 | 3500 | 1019.04 | 434 | 1019.29 | 605 | 1017.96 | 51 | 1017.73 | 24 | 1017.71 | 22 | 1017.87 | 39 |
| 14 | 1018.31 | 125 | 1018.56 | 204 | 1020.50 | 1450 | 1019.46 | 335 | 1019.00 | 180 | 1023.83 | 6230 | 1018.87 | 345 | 1019.08 | 458 | 1017.94 | 49 | 1017.77 | 28 | 1017.71 | 22 | 1017.94 | 49 |
| 15 | 1018.37 | 142 | 1018.60 | 220 | 1020.39 | 1350 | 1019.29 | 310 | 1018.98 | 165 | 1022.37 | 4070 | 1019.21 | 545 | 1019.08 | 458 | 1017.94 | 49 | 1017.64 | 16 | 1017.67 | 18 | 1017.78 | 30 |
| 16 | 1018.44 | 162 | 1018.62 | 228 | 1020.04 | 975 | 1019.23 | 285 | 1019.02 | 200 | 1021.08 | 2380 | 1019.42 | 705 | 1021.00 | 2280 | 1017.94 | 49 | 1017.75 | 26 | 1017.71 | 22 | 1017.96 | 51 |
| 17 | 1018.40 | 150 | 1018.67 | 248 | 1019.42 | 540 | 1019.27 | 310 | 1018.94 | 165 | 1021.71 | 3170 | 1019.56 | 820 | 1020.21 | 1410 | 1017.94 | 49 | 1017.69 | 20 | 1017.67 | 18 | 1017.79 | 30 |
| 18 | 1018.37 | 142 | 1018.58 | 212 | 1019.08 | 285 | 1019.17 | 240 | 1018.87 | 150 | 1021.33 | 2680 | 1019.48 | 755 | 1020.21 | 1410 | 1017.96 | 51 | 1017.79 | 30 | 1017.73 | 24 | 1017.75 | 26 |
| 19 | 1018.75 | 285 | 1018.64 | 236 | 1018.83 | 212 | 1019.00 | 170 | 1018.77 | 122 | 1021.25 | 2580 | 1019.17 | 520 | 1019.83 | 1050 | 1017.96 | 51 | 1017.69 | 20 | 1017.67 | 18 | 1017.79 | 30 |
| 20 | 1020.31 | 1510 | 1018.73 | 275 | 1018.75 | 200 | 1019.00 | 180 | 1018.87 | 150 | 1021.08 | 2380 | 1019.17 | 520 | 1019.50 | 770 | 1017.96 | 51 | 1017.73 | 24 | 1017.67 | 18 | 1018.29 | 119 |
| 21 | 1019.75 | 975 | 1018.67 | 248 | 1018.79 | 200 | 1018.92 | 136 | 1918.98 | 220 | 1021.27 | 2600 | 1018.96 | 390 | 1019.25 | 575 | 1017.96 | 51 | 1017.79 | 30 | 1017.71 | 22 | 1018.33 | 130 |
| 22 | 1019.56 | 820 | 1018.62 | 228 | 1022.87 | 4390 | 1018.87 | 136 | 1018.96 | 310 | 1024.21 | 6860 | 1018.87 | 345 | 1018.96 | 390 | 1018.17 | 90 | 1017.69 | 20 | 1017.73 | 24 | 1018.21 | 100 |
| 23 | 1019.21 | 545 | 1018.69 | 180 | 1021.25 | 2210 | 1018.87 | 136 | 1018.87 | 260 | 1022.67 | 4490 | 1019.62 | 865 | 1018.62 | 228 | 1018.00 | 57 | 1017.73 | 24 | 1017.75 | 26 | 1918.14 | 83 |
| 24 | 1019.21 | 545 | 1018.60 | 136 | 1020.62 | 1500 | 1018.87 | 136 | 1018.85 | 260 | 1021.08 | 2380 | 1019.35 | 650 | 1018.75 | 285 | 1017.98 | 54 | 1017.85 | 37 | 1017.71 | 22 | 1018.21 | 100 |
| 25 | 1019.29 | 605 | 1018.33 | 97 | 1020.83 | 1760 | 1018.87 | 136 | 1018.89 | 285 | 1020.81 | 2050 | 1019.00 | 410 | 1019.33 | 635 | 1018.10 | 74 | 1017.75 | 26 | 1017.89 | 42 | 1018.04 | 64 |
| 26 | 1019.75 | 975 | 1018.46 | 122 | 1020.96 | 1860 | 1018.83 | 117 | 1018.92 | 370 | 1020.79 | 2030 | 1018.75 | 285 | 1019.00 | 410 | 1018.00 | 57 | 1017.67 | 18 | 1017.67 | 18 | 1017.94 | 49 |
| 27 | 1020.60 | 1810 | 1018.69 | 165 | 1022.08 | 3290 | 1018.73 | 110 | 1020.54 | 1740 | 1020.79 | 2030 | 1018.79 | 305 | 1018.75 | 285 | 1018.00 | 57 | 1017.69 | 20 | 1017.79 | 30 | 1017.87 | 39 |
| 28 | 1020.94 | 2210 | 1018.77 | 220 | 1025.46 | 8470 | 1018.85 | 136 | 1022.08 | 3660 | 1020.12 | 1320 | 1018.75 | 285 | 1018.62 | 228 | 1017.96 | 51 | 1017.79 | 30 | 1017.81 | 32 | 1017.87 | 39 |
| 29 | 1020.52 | 1720 | 1018.81 | 252 | 1021.08 | 2040 | 1018.75 | 110 | 1023.29 | 5380 | 1019.73 | 955 | 1018.69 | 256 | 1018.58 | 212 | 1017.92 | 46 | 1017.69 | 20 | 1017.98 | 54 | 1017.85 | 37 |
| 30 | 1020.33 | 1530 | 1019.06 | 360 | 1020.54 | 1500 | ..... | .... | 1024.25 | 6920 | 1019.46 | 740 | 1021.06 | 2350 | 1018.54 | 196 | 1017.81 | 32 | 1017.71 | 22 | 1017.96 | 51 | 1017.89 | 39 |
| 31 | ..... | .... | 1019.08 | 385 | 1023.92 | 6020 | ..... | .... | 1024.62 | 7550 | ..... | .... | 1020.35 | 1550 | ..... | .... | 1017.89 | 42 | 1017.69 | 20 | ..... | ..... | 1017.94 | 49 |

## Monthly Discharge of Grand River near Conestogo for 1915-6

Drainage Area 550 Square Miles.

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in inches on Drainage Area |
| November (1915) | 2,210 | 125 | .538 | 4.02 | .23 | .98 | 1.09 |
| December.. " | 1,060 | 97 | 312 | 1.93 | .18 | .57 | .66 |
| January. . (1916) | 8,470 | 200 | 1,735 | 15.40 | .36 | 3.15 | 3.63 |
| February ..... | 3,290 | 110 | 411 | 5.98 | .20 | .75 | .81 |
| March..... | 7,550 | 97 | 970 | 13.73 | .18 | 1.76 | 2.03 |
| April..... | 6,990 | 740 | 2,694 | 12.71 | 1.35 | 4.90 | 5.47 |
| May..... | 2,350 | 256 | 730 | 4.27 | .47 | 1.33 | 1.53 |
| June. ..... | 2,280 | 196 | 811 | 4.15 | .36 | 1.47 | 1.64 |
| July..... | 180 | 32 | 76 | .33 | .06 | .14 | .16 |
| August..... | 49 | 18 | 25 | .09 | .03 | .05 | .06 |
| September..... | 54 | 14 | 24 | .10 | .03 | .04 | .04 |
| October..... | 130 | 18 | 47 | .24 | .03 | .08 | .09 |
| The year ..... | 8,470 | 14 | 696 | 15.40 | .03 | 1.26 | 17.29 |

## Grand River at Galt

**Location**—At the Concession Street bridge, in the City of Galt, Township of North Dumfries, County of Waterloo.

**Records Available**—July 21, 1913, to October 31, 1916.

**Drainage Area**—1,360 square miles.

**Gauge**—Vertical steel staff 0 to 12 feet on first left pier of the bridge. Elevation of zero on gauge is 851.00, which has remained unchanged since established.

**Channel and Control**—The channel is straight for 1,000 feet above and below the section. The bed is solid rock formation. Residents each year encroach on the natural channel by building up the banks to protect their lots from washing away.

**Discharge Measurements**—Made from bridge for high stages, and at a permanent wading section 150 feet upstream during low stages.

**Winter Flow**—Ice slightly affects the relation of gauge height to discharge during the winter, and measurements are made to determine the winter flow. The open-water rating curve is applicable.

**Regulation**—This section is subject to serious fluctuations in the river stage caused by the operation of the Galt dam situated ¼ mile above.

**Accuracy**—The rating curve is fairly well defined, and records are good.

**Observer**—Charles Parker, Galt.

### Discharge Measurements of Grand River at Galt in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 16.... | Cunnington, G... | 142 | 234 | 1.60 | 852.48 | 375 | ..... |
| Dec. 22.... | Yeates, W..... | 185 | 662 | .66 | 852.79 | 437 (a) | ..... |
| 1916 | | | | | | | ..... |
| Jan. 5.... | Cunnington, G... | 194 | 984 | 1.82 | 854.46 | 1,794 (b) | ..... |
| " 21.... | Yeates, W..... | 187 | 746 | 1.00 | 853.33 | 751 (c) | ..... |
| Feb. 17.... | " .... | 186 | 680 | .99 | 852.93 | 600 (d) | ..... |
| " 23.... | Roberts, E. .... | 180 | 609 | .94 | 852.72 | 573 (e) | ..... |
| Mar. 1.... | Yeates, W..... | 180 | 606 | .79 | 852.64 | 478 (f) | ..... |
| " 30.... | Cunnington, G... | 214 | 2,393 | 5.96 | 861.25 | 14,256 (g) | ..... |
| Apr. 1.... | Yeates, W..... | 114 | 2,350 | 6.87 | 860.98 | 16,145 | ..... |
| " 6.... | Cunnington, G... | 204 | 1,247 | 2.50 | 855.84 | 3,122 | ..... |
| " 6.... | " .... | 204 | 1,247 | 2.51 | 855.83 | 3,131 | ..... |
| Oct. 12.... | Roberts, E. .... | 138 | 192 | .99 | 852.96 | 189 | ..... |

(a) Ice at both sides of section; slush ice in stream.
(b) Section partly ice-covered.
(c) Thin ice on control and at gauge; slush ice in stream.
(d) Ice above and below section.
(e) Probably affected by heavy wind down stream.
(f) Ice measurement.
(g) Grass probably interferes with meter.

## Daily Gauge Height and Discharge of Grand River at Galt for 1915-6

**Drainage Area 1,360 Square Miles**

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 852.55 | 345 | 854.64 | 1890 | 852.94 | 515 | 859.00 | 9250 | 853.00 | 430 | 860.67 | 15080 | 854.17 | 1460 | 855.35 | 2650 | 852.87 | 530 | 851.86 | 142 | 851.83 | 136 | 852.02 | 174 |
| 2 | 852.53 | 335 | 854.27 | 1550 | 853.29 | 725 | 856.37 | 4010 | 852.64 | 394 | 859.04 | 9380 | 854.25 | 1530 | 854.54 | 1800 | 852.73 | 448 | 851.86 | 142 | 851.81 | 132 | 852.14 | 202 |
| 3 | 852.62 | 382 | 854.06 | 1360 | 853.87 | 1110 | 854.92 | 2170 | 852.67 | 412 | 858.08 | 6940 | 854.67 | 1910 | 857.25 | 5340 | 852.68 | 418 | 851.85 | 140 | 851.77 | 124 | 852.07 | 184 |
| 4 | 852.52 | 330 | 853.69 | 1040 | 854.19 | 1390 | 853.87 | 1190 | 852.52 | 330 | 857.08 | 5070 | 855.69 | 1930 | 856.08 | 3600 | 852.62 | 382 | 851.87 | 144 | 851.67 | 104 | 852.02 | 174 |
| 5 | 852.60 | 370 | 853.46 | 885 | 855.62 | 2870 | 853.62 | 995 | 852.50 | 320 | 856.21 | 3780 | 855.42 | 2740 | 855.50 | 2840 | 852.52 | 330 | 851.85 | 140 | 851.68 | 106 | 852.08 | 186 |
| 6 | 852.62 | 382 | 853.37 | 830 | 856.08 | 3460 | 853.15 | 700 | 852.44 | 296 | 855.81 | 3240 | 854.58 | 1830 | 855.04 | 2300 | 852.51 | 325 | 851.76 | 122 | 851.71 | 112 | 852.02 | 174 |
| 7 | 852.51 | 325 | 853.23 | 750 | 856.02 | 3390 | 853.00 | 610 | 852.58 | 360 | 855.17 | 2450 | 854.12 | 1420 | 854.27 | 1550 | 852.46 | 304 | 851.73 | 116 | 851.79 | 128 | 851.98 | 166 |
| 8 | 852.60 | 370 | 853.28 | 780 | 855.21 | 2380 | 853.44 | 875 | 852.58 | 360 | 854.60 | 1850 | 853.96 | 1270 | 854.67 | 1910 | 852.35 | 265 | 851.77 | 124 | 851.78 | 126 | 851.92 | 154 |
| 9 | 852.75 | 460 | 853.19 | 725 | 854.79 | 1930 | 852.57 | 271 | 852.44 | 296 | 854.56 | 1810 | 854.02 | 1330 | 854.75 | 1990 | 852.44 | 296 | 851.81 | 132 | 851.78 | 126 | 851.88 | 146 |
| 10 | 852.62 | 382 | 852.96 | 585 | 854.77 | 1910 | 852.61 | 284 | 852.58 | 360 | 854.19 | 1480 | 854.10 | 1400 | 856.62 | 4370 | 852.37 | 271 | 851.81 | 132 | 851.68 | 106 | 851.97 | 164 |
| 11 | 852.56 | 350 | 852.39 | 277 | 854.52 | 1690 | 852.73 | 335 | 852.87 | 530 | 854.27 | 1550 | 854.27 | 1550 | 855.29 | 2580 | 852.37 | 271 | 851.92 | 154 | 851.71 | 112 | 852.14 | 202 |
| 12 | 852.64 | 394 | 852.21 | 223 | 854.54 | 1710 | 852.69 | 316 | 852.67 | 412 | 854.87 | 2120 | 854.44 | 1710 | 854.69 | 1930 | 852.33 | 259 | 851.85 | 140 | 851.83 | 136 | 851.97 | 164 |
| 13 | 852.61 | 376 | 352.69 | 424 | 854.98 | 2130 | 852.82 | 382 | 352.37 | 271 | 857.20 | 5260 | 853.83 | 1160 | 854.50 | 1760 | 852.29 | 247 | 851.84 | 138 | 851.77 | 124 | 852.08 | 186 |
| 14 | 852.54 | 340 | 852.37 | 271 | 856.00 | 2150 | 852.28 | 186 | 852.58 | 360 | 858.90 | 8970 | 853.58 | 965 | 854.21 | 1500 | 852.17 | 211 | 851.78 | 126 | 851.73 | 116 | 852.06 | 182 |
| 15 | 852.68 | 418 | 852.29 | 247 | 855.08 | 2240 | 852.78 | 360 | 853.25 | 400 | 859.08 | 9510 | 854.00 | 1319 | 854.29 | 1570 | 852.21 | 223 | 851.81 | 132 | 851.71 | 112 | 852.08 | 186 |
| 16 | 852.70 | 430 | 852.48 | 312 | 854.46 | 1450 | 852.82 | 382 | 852.69 | 424 | 856.87 | 4740 | 854.67 | 1910 | 855.92 | 3390 | 852.12 | 196 | 851.67 | 104 | 851.74 | 118 | 852.10 | 190 |
| 17 | 852.67 | 412 | 852.64 | 394 | 854.00 | 1050 | 852.92 | 442 | 852.75 | 460 | 856.92 | 4820 | 854.75 | 1990 | 854.92 | 3390 | 852.08 | 186 | 851.80 | 130 | 851.66 | 102 | 852.09 | 188 |
| 18 | 852.62 | 382 | 852.89 | 545 | 853.58 | 780 | 853.00 | 490 | 852.69 | 424 | 857.18 | 5230 | 854.69 | 1930 | 855.37 | 2670 | 852.00 | 170 | 851.87 | 144 | 851.69 | 108 | 852.06 | 182 |
| 19 | 852.96 | 585 | 852.81 | 496 | 853.50 | 730 | 853.19 | 605 | 852.54 | 340 | 856.00 | 3490 | 854.25 | 1530 | 854.96 | 2220 | 852.08 | 186 | 851.88 | 146 | 851.73 | 116 | 852.21 | 223 |
| 20 | 855.42 | 2740 | 852.96 | 585 | 853.62 | 800 | 853.14 | 575 | 852.54 | 340 | 855.23 | 2510 | 854.04 | 1350 | 854.50 | 1760 | 852.10 | 190 | 851.85 | 140 | 851.95 | 160 | 852.52 | 330 |
| 21 | 854.96 | 2220 | 852.92 | 560 | 853.37 | 830 | 853.08 | 540 | 852.60 | 370 | 856.71 | 4500 | 853.77 | 1110 | 854.12 | 1420 | 852.06 | 182 | 851.82 | 134 | 851.81 | 132 | 852.75 | 460 |
| 22 | 854.33 | 1610 | 852.98 | 609 | 855.50 | 2840 | 852.83 | 388 | 852.46 | 304 | 857.58 | 5920 | 853.64 | 1010 | 853.75 | 1090 | 851.96 | 162 | 851.82 | 134 | 851.83 | 136 | 852.75 | 460 |
| 23 | 853.85 | 1180 | 852.75 | 460 | 858.62 | 8220 | 852.75 | 345 | 852.56 | 350 | 859.25 | 10060 | 854.33 | 1610 | 853.46 | 885 | 852.48 | 312 | 851.90 | 150 | 851.82 | 134 | 852.59 | 365 |
| 24 | 853.73 | 1070 | 852.64 | 394 | 856.17 | 3730 | 852.85 | 400 | 852.50 | 320 | 856.96 | 4880 | 854.79 | 2030 | 853.27 | 770 | 852.37 | 271 | 851.83 | 136 | 851.69 | 108 | 852.52 | 330 |
| 25 | 853.71 | 1060 | 852.64 | 394 | 856.21 | 3780 | 852.71 | 325 | 852.29 | 247 | 855.96 | 3440 | 854.17 | 1460 | 854.17 | 1460 | 852.17 | 211 | 851.86 | 142 | 851.64 | 98 | 852.51 | 325 |
| 26 | 853.71 | 1060 | 852.71 | 436 | 855.79 | 3220 | 852.67 | 308 | 852.67 | 412 | 856.12 | 3660 | 853.62 | 995 | 854.21 | 1500 | 852.23 | 229 | 851.85 | 140 | 851.61 | 92 | 852.42 | 288 |
| 27 | 855.50 | 2840 | 852.75 | 460 | 856.92 | 4820 | 852.64 | 296 | 853.79 | 1120 | 857.00 | 4940 | 853.56 | 950 | 853.71 | 1060 | 852.10 | 190 | 851.75 | 120 | 851.82 | 134 | 852.34 | 262 |
| 28 | 856.33 | 3950 | 852.77 | 472 | 864.33 | 13710 | 852.60 | 280 | 856.83 | 4690 | 855.67 | 3060 | 854.33 | 1610 | 853.46 | 885 | 852.12 | 196 | 851.73 | 116 | 851.84 | 138 | 852.29 | 247 |
| 29 | 855.60 | 2970 | 853.00 | 610 | 857.58 | 5920 | 852.79 | 365 | 860.46 | 14300 | 854.96 | 2220 | 854.71 | 1950 | 853.23 | 750 | 851.94 | 158 | 851.77 | 124 | 852.08 | 186 | 852.17 | 211 |
| 30 | 855.83 | 3270 | 853.17 | 710 | 856.42 | 4080 | ..... | .... | 861.92 | 19700 | 854.54 | 1800 | 855.75 | 3160 | 853.00 | 610 | 851.92 | 154 | 851.83 | 136 | 852.10 | 190 | 852.23 | 229 |
| 31 | ..... | .... | 853.12 | 680 | 858.67 | 8350 | ..... | .... | 861.42 | 17850 | ..... | ..... | 856.87 | 4740 | ..... | .... | 851.89 | 148 | 851.82 | 134 | ..... | ..... | 852.25 | 235 |

## Monthly Discharge of Grand River at Galt for 1915-6

Drainage Area, 1,360 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November. (1915) | 3,950 | 325 | 1,045 | 2.90 | .24 | .77 | .86 |
| December. " | 1,890 | 223 | 643 | 1.39 | .16 | .47 | .54 |
| January .. (1916) | 13,710 | 515 | 3,029 | 10.08 | .38 | 2.23 | 2.57 |
| February..... | 9,250 | 186 | 954 | 6.80 | .14 | .70 | .76 |
| March..... | 19,700 | 247 | 2,167 | 14.49 | .18 | 1.59 | 1.83 |
| April..... | 15,080 | 1,480 | 4,792 | 11.09 | 1.09 | 3.52 | 3.93 |
| May..... | 4,740 | 950 | 1,705 | 3.49 | .70 | 1.25 | 1.44 |
| June..... | 5,340 | 610 | 2,052 | 3.93 | .45 | 1.51 | 1.68 |
| July..... | 530 | 148 | 256 | .39 | .11 | .19 | .22 |
| August..... | 154 | 104 | 134 | .11 | .08 | .10 | .12 |
| September..... | 190 | 92 | 126 | .14 | .07 | .09 | .10 |
| October..... | 460 | 146 | 231 | .34 | .11 | .17 | .20 |
| The year..... | 19,700 | 92 | 1,424 | 14.49 | .07 | 1.05 | 14.29 |

## Grand River at Glen Morris

Location—At the Glen Morris bridge, in the Village of Glen Morris, Township of South Dumfries, County of Brant.

Records Available—Discharge measurements from August, 1912, to October 31, 1916. Daily gauge heights, July 21, 1913, to October 31, 1916.

Drainage Area—1,390 square miles.

Gauge—Vertical steel staff 0 to 6 feet on a post and 6 to 12 feet on a tree on left bank. Elevation of the zero on gauge is 801.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 1,000 feet above and below the section. The bed of the river is composed of gravel and boulders, and banks are permanent. The bed and control is shifting under high water conditions.

Discharge Measurements—Made from bridge during the high water stages, and at permanent wading section located 150 feet upstream during the lower water periods.

Winter Flow—This section is seriously affected by ice which usually floods, forming as many as three or four layers of ice with water between them. Measurements are made during the winter months to determine the winter flow.

Regulation—This section is subject to fluctuations in the river stage, due to the storing of water, during the night and at week ends, by the Galt dam, located eight miles above.

Accuracy—Owing to poor natural conditions, the liability of the control to shift and back water caused by ice, the records cannot be considered better than fair.

Observer—Alfred Forbes, Glen Morris P.O.

### Discharge Measurements of Grand River at Glen Morris in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 6.... | Yeates, W. .... | 265 | 404 | 1.02 | 802.52 | 415 | ..... |
| Dec. 21.... | " .... | 222 | 315 | 1.81 | 802.83 | 571 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 4.... | Cunnington, G... | 281 | 770 | 2.78 | 804.06 | 2,137 (b) | ..... |
| Feb. 17.... | " .... | 266 | 537 | 1.57 | 803.27 | 843 (c) | ..... |
| " 24.... | Roberts, E. .... | 266 | 438 | 1.30 | 802.83 | 589 (d) | ..... |
| " 25.... | Yeates, W. .... | 266 | 495 | 1.22 | 802.87 | 606 (e) | ..... |
| Mar. 1.... | " .... | 266 | 544 | .98 | 803.23 | 537 | ..... |
| " 16.... | " .... | 266 | 471 | 1.33 | 803.12 | 626 | ..... |
| Apr. 1.... | " .... | 410 | 2,669 | 7.47 | 809.19 | 19,942 | ..... |
| " 8.... | Cunnington, G... | 281 | 829 | 2.74 | 804.08 | 2,274 | ..... |
| " 8.... | " .... | 281 | 801 | 2.73 | 804.04 | 2,185 | ..... |
| July 5.... | Yeates, W. .... | 271 | 468 | 1.18 | 802.79 | 553 | ..... |
| Oct. 12.... | Roberts, E. .... | 171 | 167 | 1.15 | 802.37 | 192 | ..... |

(a) Ice at both sides of section.
(b) Ice at piers.
(c) Ice on section half-way across.
(d) Section partly ice-covered.
(e) Ice measurement.

## Daily Gauge Height and Discharge of Grand River at Glen Morris for 1915-6

Drainage Area. 1,390 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 802.52 | 464 | 804.00 | 2270 | 802.77 | 665 | 806.92 | 9140 | 803.08 | 560 | 809.25 | 16420 | 803.79 | 1940 | 804.58 | 3380 | 802.96 | 855 | 802.25 | 320 | 802.33 | 355 | 802.37 | 375 |
| 2 | 802.54 | 478 | 803.69 | 1800 | 803.77 | 840 | 806.75 | 6870 | 802.83 | 450 | 808.33 | 13460 | 803.79 | 1940 | 804.00 | 2270 | 802.75 | 645 | 802.29 | 336 | 802.33 | 355 | 802.37 | 375 |
| 3 | 802.35 | 365 | 803.60 | 1670 | 803.97 | 1020 | 806.71 | 4510 | 803.17 | 520 | 806.17 | 7050 | 804.12 | 2480 | 805.83 | 6180 | 802.67 | 575 | 802.33 | 355 | 802.33 | 355 | 802.33 | 355 |
| 4 | 802.44 | 414 | 803.46 | 1480 | 804.08 | 2110 | 805.75 | 2810 | 802.87 | 450 | 805.83 | 6180 | 804.62 | 3450 | 804.96 | 4200 | 802.67 | 575 | 802.33 | 355 | 802.29 | 336 | 802.37 | 375 |
| 5 | 802.52 | 464 | 803.54 | 1590 | 804.04 | 2110 | 805.83 | 1670 | 803.00 | 520 | 805.00 | 4290 | 804.46 | 3130 | 804.54 | 3290 | 802.71 | 610 | 802.29 | 336 | 802.29 | 336 | 802.33 | 355 |
| 6 | 802.44 | 414 | 803.04 | 950 | ..... | 2300 | 803.12 | 900 | 803.00 | 520 | 804.92 | 4110 | 804.00 | 2270 | 804.42 | 3050 | 802.67 | 575 | 802.25 | 320 | 802.33 | 355 | 802.33 | 355 |
| 7 | 802.46 | 426 | 802.94 | 830 | ..... | 2260 | 803.17 | 960 | 803.00 | 520 | 804.67 | 3570 | 803.79 | 1940 | 803.92 | 2140 | 802.62 | 535 | 802.25 | 320 | 802.33 | 355 | 802.33 | 355 |
| 8 | 802.50 | 450 | 802.81 | 700 | ..... | 2130 | 803.21 | 1020 | 803.00 | 520 | 804.08 | 2410 | 803.58 | 1640 | 804.00 | 2270 | 802.58 | 505 | 802.29 | 336 | 802.33 | 355 | 802.21 | 304 |
| 9 | 802.46 | 426 | 802.73 | 625 | .... | 2050 | 803.08 | 790 | 803.00 | 520 | 803.92 | 2140 | 803.71 | 1820 | 804.12 | 2480 | 802.58 | 505 | 802.29 | 336 | 802.33 | 355 | 802.29 | 336 |
| 10 | 802.54 | 478 | 802.64 | 550 | .... | 2020 | 802.96 | 690 | 803.00 | 520 | 803.75 | 1880 | 803.71 | 1820 | 805.08 | 4470 | 802.58 | 505 | 802.29 | 336 | 802.25 | 320 | 802.29 | 336 |
| 11 | 802.44 | 414 | 802.54 | 414 | ..... | 1960 | 803.00 | 740 | 803.00 | 450 | 803.62 | 1700 | 803.83 | 2000 | 804.54 | 3260 | 802.58 | 505 | 802.33 | 355 | 802.17 | 288 | 802.29 | 336 |
| 12 | 802.52 | 464 | 802.60 | 450 | ..... | 1890 | 804.21 | 1140 | 802.79 | 390 | 803.67 | 1770 | 804.00 | 2270 | 804.17 | 2570 | 802.50 | 450 | 802.33 | 355 | 802.12 | 268 | 802.29 | 336 |
| 13 | 802.48 | 438 | 802.67 | 499 | ..... | 1810 | 803.25 | 1020 | 802.87 | 420 | 803.71 | 1820 | 803.58 | 1640 | 803.92 | 2140 | 802.54 | 480 | 802.33 | 355 | 802.21 | 304 | 802.37 | 375 |
| 14 | 802.23 | 312 | 802.56 | 426 | ..... | 1750 | 803.21 | 900 | 802.92 | 450 | 805.83 | 6180 | 803.33 | 1300 | 803.75 | 1880 | 802.50 | 450 | 802.33 | 355 | 802.25 | 320 | 802.37 | 375 |
| 15 | 802.26 | 324 | 802.64 | 478 | ..... | 1700 | 803.25 | 945 | 803.00 | 485 | 807.08 | 9620 | 803.54 | 1590 | 803.58 | 1640 | 802.50 | 450 | 802.29 | 336 | 802.46 | 426 | 802.46 | 426 |
| 16 | 802.35 | 365 | 802.60 | 450 | ..... | 1640 | 803.29 | 900 | 803.08 | 520 | 805.21 | 4750 | 804.04 | 2340 | 804.21 | 2640 | 802.42 | 402 | 802.33 | 355 | 802.46 | 426 | 802.46 | 426 |
| 17 | 802.14 | 276 | 802.56 | 426 | ..... | 1590 | 803.25 | 840 | 803.12 | 645 | 805.23 | 4800 | 804.12 | 2480 | 804.29 | 2800 | 802.42 | 402 | 802.29 | 336 | 802.21 | 304 | 802.42 | 402 |
| 18 | 802.31 | 345 | 802.52 | 402 | ..... | 1530 | 803.17 | 790 | 803.17 | 690 | 805.54 | 5480 | 804.12 | 2480 | 804.67 | 3570 | 802.42 | 402 | 802.33 | 355 | 802.17 | 288 | 802.37 | 375 |
| 19 | 804.64 | 3500 | 802.54 | 414 | ..... | 1470 | 803.12 | 760 | 802.96 | 520 | 805.04 | 4380 | 803.83 | 2000 | 804.33 | 2870 | 802.42 | 402 | 802.42 | 402 | 802.25 | 320 | 802.46 | 426 |
| 20 | 804.69 | 3610 | 802.56 | 426 | 803.42 | 1430 | 803.29 | 900 | 803.00 | 600 | 804.50 | 3210 | 803.67 | 1770 | 804.04 | 2340 | 802.46 | 426 | 802.33 | 355 | 802.29 | 336 | 802.79 | 680 |
| 21 | 804.19 | 2600 | 802.52 | 402 | 803.17 | 1140 | 803.08 | 740 | 803.08 | 645 | 805.50 | 5390 | 803.54 | 1590 | 803.75 | 1880 | 802.42 | 402 | 802.33 | 355 | 802.29 | 336 | 802.96 | 855 |
| 22 | 803.19 | 1130 | 802.48 | 380 | 803.83 | 2000 | 803.12 | 760 | 803.12 | 670 | 806.58 | 8150 | 803.46 | 1470 | 803.54 | 1590 | 802.58 | 505 | 802.33 | 355 | 802.33 | 355 | 802.87 | 760 |
| 23 | 804.04 | 2340 | 802.44 | 360 | 808.67 | 10880 | 802.87 | 600 | 803.17 | 710 | 807.75 | 11630 | 803.96 | 2210 | 803.37 | 1350 | 802.71 | 610 | 802.33 | 355 | 802.33 | 355 | 802.83 | 720 |
| 24 | 804.15 | 2530 | 802.56 | 426 | 805.08 | 4470 | 802.83 | 590 | 802.92 | 520 | 805.83 | 6180 | 804.17 | 2570 | 803.21 | 1150 | 802.67 | 575 | 802.33 | 355 | 802.21 | 304 | 802.75 | 645 |
| 25 | 804.31 | 2830 | 802.64 | 478 | 804.92 | 4110 | 802.87 | 620 | 803.00 | 690 | 805.04 | 4370 | 803.79 | 1940 | 803.67 | 1770 | 802.50 | 450 | 802.33 | 355 | 802.21 | 304 | 802.67 | 665 |
| 26 | 804.44 | 3090 | 802.69 | 515 | 805.08 | 4470 | 803.00 | 690 | 802.92 | 810 | 805.00 | 4290 | 803.46 | 1470 | 803.83 | 2000 | 802.50 | 450 | 802.33 | 355 | 802.29 | 336 | 802.58 | 505 |
| 27 | 805.50 | 5390 | 802.64 | 478 | 806.08 | 6820 | 802.87 | 450 | 803.75 | 1880 | 805.42 | 5210 | 803.33 | 1300 | 803.50 | 1530 | 802.50 | 550 | 802.33 | 355 | 802.29 | 336 | 802.54 | 478 |
| 28 | 805.62 | 5670 | 802.73 | 545 | 808.83 | 15110 | 802.92 | 420 | 805.83 | 6180 | 804.83 | 3920 | 803.75 | 1880 | 803.29 | 1250 | 802.50 | 450 | 802.25 | 320 | 802.25 | 320 | 802.46 | 426 |
| 29 | 805.60 | 5620 | 802.77 | 575 | 805.75 | 5980 | 803.00 | 450 | 808.33 | 13460 | 804.29 | 2790 | 804.08 | 2410 | 803.12 | 1040 | 802.42 | 402 | 802.29 | 336 | 802.29 | 336 | 802.46 | 426 |
| 30 | 804.10 | 2440 | 802.85 | 645 | 804.79 | 3830 | ..... | .... | 809.92 | 18840 | 803.96 | 2210 | 805.12 | 4550 | 803.00 | 900 | 802.25 | 320 | 802.33 | 355 | 802.29 | 336 | 802.50 | 450 |
| 31 | ..... | ..... | 803.06 | 850 | 807.00 | 9380 | ..... | .... | 809.42 | 17100 | ..... | ..... | 805.71 | 5880 | ..... | ..... | 802.17 | 288 | 802.33 | 355 | ..... | ..... | 802.46 | 426 |

## Monthly Discharge of Grand River at Glen Morris for 1915-6

Drainage Area, 1,390 Square Miles

| Month | Discharge in Second-feet | | | Drainage in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 5,670 | 276 | 1,602 | 4.08 | .20 | 1.15 | 1.28 |
| December.. " | 2,270 | 360 | 726 | 1.63 | .26 | .52 | .60 |
| January .. (1916) | 15,110 | 665 | 3,305 | 10.87 | .48 | 2.38 | 2.74 |
| February ..... | 9,140 | 420 | 1,504 | 6.58 | .30 | 1.08 | 1.16 |
| March..... | 18,840 | 390 | 2,315 | 13.55 | .28 | 1.67 | 1.93 |
| April..... | 16,420 | 1,700 | 5,312 | 11.81 | 1.22 | 3.82 | 4.26 |
| May..... | 5,880 | 1,300 | 2,245 | 4.23 | .94 | 1.61 | 1.86 |
| June ..... | 6,180 | 900 | 2,463 | 4.45 | .65 | 1.77 | 1.97 |
| July..... | 855 | 288 | 483 | .62 | .21 | .35 | .40 |
| August..... | 402 | 320 | 347 | .29 | .23 | .25 | .29 |
| September..... | 426 | 268 | 336 | .31 | .19 | .24 | .27 |
| October..... | 855 | 304 | 453 | .62 | .22 | .33 | .38 |
| The year..... | 18,840 | 268 | 1,752 | 13.55 | .19 | 1.26 | 17.15 |

## Grand River at York

Location—At the highway bridge in the Village of York, Township of Oneida, County of Haldimand.

Records Available—June 25, 1913, to October 31, 1916.

Drainage Area—2,280 square miles.

Gauge—Vertical steel staff 0 to 6 feet on the first pier from left abutment and 6 to 12 feet on the left abutment. The elevation of zero is 593.00, and has remained unchanged since established.

Channel and Control—The flow is confined between the abutments of the bridge at all stages. The bed of the river is well protected, but shifting during flood stages. A partly demolished dam about 200 feet downstream affects flow, especially at low stages. Part of this old dam is washed out at each flood period.

Discharge Measurements—Taken from the highway bridge, and at a permanent low water section located 800 feet above during the low water period.

Floods—No floods of a serious nature have occurred here since the spring of 1912, when the dam below the bridge was wrecked, the water cutting around the right abutment, greatly increasing the width of the channel. Village residents state the water rose to a gauge height of 606 feet, which would mean approximately 100,000 second feet.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice, and measurements are made to determine the winter flow.

Regulation—The nearest dam is at Caledonia, five miles above. The intermittent operation of the mills causes daily fluctuations in the gauge heights.

Accuracy—The conditions of flow are good, except for the fluctuations caused through the Caledonia Mills. Well-defined rating curves have been established, and the records can be considered good. Semi-daily gauge heights will not give a good representative mean.

Observer—Fred. Brown, York P.O.

### Discharge Measurements of Grand River at York in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 18.... | Cunnington, G.. | 293 | 492 | 1.51 | 593.87 | 746 | ..... |
| 1916 | | | | | | | |
| Jan. 10.... | " .... | 387 | 2,229 | 2.11 | 596.79 | 4,706 (a) | ..... |
| " 22.... | Yeates, W..... | 382 | 2,653 | 1.34 | 598.02 | 3,543 (a) | ..... |
| Apr. 1.... | Roberts, E..... | 400 | 3,444 | 6.37 | 600.00 | 21,937 (b) | ..... |
| " 1.... | " .... | 400 | 3,364 | 6.32 | 599.75 | 21,256 | ..... |
| " 3.... | " .... | 382 | 2,610 | 4.59 | 597.92 | 11,970 | ..... |
| " 3.... | " .... | 378 | 2,418 | 4.20 | 597.33 | 10,168 | ..... |
| " 4.... | " .... | 378 | 2,229 | 3.68 | 596.92 | 8,213 | ..... |
| " 4.... | " .... | 378 | 2,229 | 3.44 | 596.83 | 7,660 | ..... |
| July 6.... | " .... | 341 | 1,177 | .67 | 593.94 | 789 | ..... |

(a) Heavy ice piled on crest of dam causing backwater.
(b) Control changing.

## Daily Gauge Height and Discharge of Grand River at York for 1915-6

Drainage Area, 2,280 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 593.94 | 765 | 596.42 | 5060 | 594.50 | 1340 | 599.87 | 21180 | 596.00 | 1500 | 600.00 | 21800 | 595.42 | 3210 | 596.87 | 7810 | 594.39 | 1370 | 593.44 | 424 | 593.31 | 355 | 593.14 | 276 |
| 2 | 594.02 | 840 | 595.54 | 2910 | 595.48 | 1520 | 597.87 | 11870 | 596.00 | 1440 | 599.00 | 17000 | 595.29 | 2900 | 596.17 | 5340 | 594.25 | 1200 | 593.42 | 412 | 593.31 | 355 | 593.39 | 395 |
| 3 | 593.83 | 660 | 595.33 | 2520 | 595.83 | 2140 | 596.46 | 6270 | 595.85 | 1440 | 597.54 | 10510 | 595.33 | 2990 | 596.21 | 5470 | 594.17 | 1100 | 593.46 | 436 | 593.27 | 335 | 593.50 | 460 |
| 4 | 593.87 | 700 | 595.04 | 2050 | 596.17 | 2830 | 596.04 | 3400 | 595.79 | 1380 | 596.62 | 6860 | 595.58 | 3620 | 596.75 | 7350 | 594.04 | 950 | 593.52 | 474 | 593.31 | 355 | 593.48 | 448 |
| 5 | 593.94 | 765 | 594.96 | 1930 | 596.71 | 3420 | 597.42 | 3040 | 595.69 | 1380 | 596.33 | 5860 | 596.04 | 4930 | 596.42 | 6140 | 594.00 | 900 | 593.42 | 412 | 593.19 | 296 | 593.42 | 412 |
| 6 | 593.79 | 625 | 594.71 | 1600 | 597.46 | 5300 | 598.29 | 2810 | 595.83 | 1380 | 596.40 | 6080 | 595.83 | 4320 | 596.04 | 4930 | 594.00 | 900 | 593.31 | 355 | 592.96 | 208 | 593.42 | 412 |
| 7 | 593.83 | 660 | 594.60 | 1460 | 598.21 | 9500 | 598.00 | 2600 | 595.69 | 1320 | 596.62 | 6860 | 595.44 | 3260 | 596.08 | 5060 | 593.96 | 855 | 593.42 | 412 | 593.21 | 305 | 593.46 | 436 |
| 8 | 593.98 | 800 | 594.54 | 1390 | 598.50 | 10000 | 597.60 | 2400 | 595.83 | 1320 | 596.21 | 5470 | 595.31 | 2940 | 596.19 | 5310 | 593.81 | 700 | 593.44 | 424 | 593.48 | 448 | 593.23 | 315 |
| 9 | 594.00 | 820 | 594.50 | 1340 | 597.29 | 7160 | 597.33 | 2210 | 595.77 | 1260 | 595.62 | 3740 | 595.17 | 2640 | 596.06 | 4990 | 593.67 | 585 | 593.21 | 305 | 593.44 | 424 | 593.33 | 365 |
| 10 | 593.90 | 725 | 594.50 | 1340 | 596.83 | 4660 | 597.31 | 2210 | 595.75 | 1260 | 595.50 | 3400 | 595.25 | 2810 | 596.17 | 5340 | 593.71 | 620 | 593.23 | 315 | 593.06 | 244 | 593.42 | 412 |
| 11 | 593.98 | 800 | 594.42 | 1250 | 596.52 | 3680 | 597.33 | 2120 | 595.64 | 1200 | 595.44 | 3260 | 595.44 | 3260 | 596.71 | 7200 | 593.81 | 700 | 593.21 | 305 | 593.21 | 305 | 593.42 | 412 |
| 12 | 593.94 | 765 | 594.42 | 1250 | 596.42 | 3540 | 597.33 | 2120 | 595.58 | 1140 | 595.64 | 3790 | 595.69 | 3930 | 596.37 | 5980 | 593.83 | 720 | 593.21 | 305 | 593.25 | 325 | 593.33 | 365 |
| 13 | 593.96 | 780 | 594.08 | 900 | 596.46 | 3680 | 597.25 | 2030 | 595.69 | 1140 | 595.87 | 4440 | 595.71 | 3990 | 596.12 | 5180 | 593.75 | 650 | 593.42 | 412 | 593.29 | 345 | 593.33 | 365 |
| 14 | 593.75 | 590 | 594.44 | 1270 | 597.37 | 6780 | 597.25 | 1940 | 595.75 | 1140 | 597.96 | 12240 | 595.12 | 2540 | 595.60 | 3680 | 593.75 | 650 | 593.37 | 385 | 593.12 | 268 | 593.46 | 436 |
| 15 | 594.12 | 940 | 595.12 | 2170 | 597.50 | 7160 | 597.08 | 1940 | 595.64 | 1140 | 599.33 | 18580 | 595.33 | 2990 | 595.42 | 3210 | 593.71 | 620 | 593.39 | 395 | 593.17 | 288 | 593.27 | 335 |
| 16 | 593.96 | 780 | 595.37 | 2600 | 597.08 | 5760 | 597.08 | 1940 | 595.44 | 1140 | 597.87 | 11870 | 596.04 | 4930 | 595.29 | 2900 | 593.58 | 515 | 593.46 | 436 | 593.21 | 305 | 593.42 | 412 |
| 17 | 593.87 | 700 | 595.27 | 2420 | 597.37 | 6400 | 597.00 | 1860 | 595.48 | 1140 | 596.96 | 8150 | 596.21 | 5470 | 595.96 | 4690 | 593.75 | 650 | 593.25 | 325 | 592.96 | 208 | 593.71 | 620 |
| 18 | 593.89 | 715 | 595.17 | 2250 | 598.29 | 9940 | 597.00 | 1780 | 595.42 | 1080 | 597.29 | 9490 | 596.21 | 5470 | 595.75 | 4100 | 593.71 | 620 | 593.25 | 325 | 593.33 | 365 | 593.48 | 448 |
| 19 | 594.06 | 880 | 595.06 | 2080 | 597.48 | 7160 | 596.89 | 1780 | 595.27 | 900 | 596.69 | 7120 | 595.83 | 4320 | 595.94 | 4630 | 593.52 | 474 | 593.27 | 335 | 593.33 | 365 | 593.50 | 460 |
| 20 | 594.39 | 1220 | 594.96 | 1930 | 597.46 | 6970 | 596.62 | 1710 | 595.44 | 1140 | 596.29 | 5730 | 595.58 | 3620 | 595.67 | 3880 | 593.58 | 515 | 593.35 | 375 | 593.37 | 385 | 593.79 | 680 |
| 21 | 596.39 | 4970 | 594.85 | 1780 | 597.42 | 6780 | 596.71 | 1710 | 595.33 | 1080 | 596.33 | 5860 | 585.34 | 3020 | 595.37 | 3090 | 593.52 | 474 | 593.33 | 365 | 593.31 | 355 | 594.12 | 1040 |
| 22 | 595.96 | 3800 | 594.83 | 1760 | 597.87 | 8300 | 596.48 | 1710 | 595.31 | 1040 | 596.92 | 8000 | 595.14 | 2580 | 595.04 | 2380 | 593.58 | 515 | 593.25 | 325 | 593.25 | 325 | 594.17 | 1100 |
| 23 | 595.43 | 2700 | 594.75 | 1660 | 598.67 | 12400 | 596.42 | 1640 | 595.19 | 1080 | 599.33 | 18580 | 595.83 | 4320 | 594.87 | 2070 | 393.52 | 474 | 593.37 | 385 | 593.29 | 345 | 594.21 | 1150 |
| 24 | 594.06 | 880 | 594.71 | 1600 | 598.79 | 16030 | 596.48 | 1640 | 595.33 | 1500 | 597.67 | 11050 | 596.42 | 6140 | 594.67 | 1740 | 593.92 | 810 | 593.42 | 412 | 593.04 | 236 | 594.04 | 950 |
| 25 | 594.89 | 1840 | 594.73 | 1630 | 598.02 | 12490 | 596.31 | 1640 | 595.04 | 2380 | 596.87 | 7810 | 596.00 | 4800 | 594.62 | 1670 | 593.85 | 740 | 593.44 | 424 | 593.25 | 325 | 593.87 | 760 |
| 26 | 594.81 | 1730 | 594.44 | 1270 | 596.87 | 7810 | 596.31 | 1640 | 595.71 | 3990 | 596.67 | 7050 | 595.42 | 3210 | 594.42 | 1400 | 593.67 | 585 | 593.44 | 424 | 593.27 | 335 | 593.81 | 700 |
| 27 | 594.83 | 1760 | 594.46 | 1300 | 596.79 | 7500 | 596.17 | 1570 | 597.42 | 10020 | 596.54 | 6550 | 595.33 | 2990 | 594.50 | 1500 | 593.58 | 515 | 593.35 | 365 | 593.31 | 355 | 593.79 | 680 |
| 28 | 596.54 | 5440 | 594.71 | 1600 | 598.50 | 14700 | 596.08 | 1570 | 598.96 | 16820 | 596.23 | 5540 | 595.27 | 2850 | 594.71 | 1800 | 593.58 | 515 | 593.31 | 355 | 593.23 | 315 | 593.69 | 600 |
| 29 | 596.79 | 6360 | 594.50 | 1340 | 599.92 | 21420 | 595.98 | 1500 | 600.08 | 22220 | 595.85 | 4380 | 595.62 | 3740 | 594.46 | 1450 | 593.58 | 515 | 593.17 | 288 | 593.25 | 325 | 593.58 | 515 |
| 30 | 596.42 | 5060 | 594.56 | 1410 | 597.21 | 9160 | ..... | ..... | 600.67 | 25280 | 595.71 | 3990 | 596.54 | 6550 | 594.42 | 1400 | 593.48 | 448 | 593.25 | 325 | 593.23 | 315 | 593.62 | 545 |
| 31 | ..... | .... | 594.37 | 1200 | 597.17 | 9000 | ..... | ..... | 601.02 | 27100 | ..... | ..... | 597.12 | 8790 | ..... | .... | 593.52 | 474 | 593.27 | 335 | ..... | .... | 593.64 | 560 |

## Monthly Discharge of Grand River at York for 1915-6

Drainage Area, 2,280 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 6,360 | 590 | 1,669 | 2.80 | .26 | .73 | .81 |
| December " | 5,060 | 900 | 1,815 | 2.22 | .39 | .80 | .92 |
| January (1916) | 21,420 | 1,340 | 7,565 | 9.39 | .59 | 3.32 | 3.83 |
| February | 21,180 | 1,500 | 3,167 | 9.29 | .66 | 1.39 | 1.50 |
| March | 27,100 | 900 | 4,430 | 11.89 | .39 | 1.94 | 2.24 |
| April | 21,800 | 3,260 | 8,369 | 9.56 | 1.43 | 3.67 | 4.09 |
| May | 8,790 | 2,640 | 3,972 | 3.86 | 1.16 | 1.74 | 2.01 |
| June | 7,810 | 1,400 | 4,056 | 3.43 | .61 | 1.78 | 1.99 |
| July | 1,370 | 448 | 689 | .60 | .20 | .30 | .35 |
| August | 474 | 288 | 373 | .21 | .13 | .16 | .18 |
| September | 448 | 208 | 324 | .20 | .09 | .14 | .16 |
| October | 1,150 | 276 | 550 | .50 | .12 | .24 | .28 |
| The year | 27,100 | 208 | 3,076 | 11.89 | .09 | 1.35 | 18.38 |

## Boston Creek near York

Location—At the second highway bridge known as Anderson's Bridge, above the junction with the Grand River, between Concessions 5 and 6, Township of Oneida, County of Haldimand.

Records Available—June 23, 1913, to May 31, 1915, at first highway bridge. At Anderson's Bridge, June 1, 1915, to August 31, 1916.

Drainage Area—125 square miles.

Gauge—Vertical steel staff 0 to 9 feet, attached to downstream side of left abutment. Elevation of zero on gauge is 600.00.

Channel and Control—The channel is straight for 400 feet above and below the gauging section. The river bed is composed of slab rock and is not shifting under normal conditions. The flow passes between the two abutments of the bridge at all stages.

Discharge Measurements—Made from the bridge during freshet stages and from a permanent wading section 100 feet above, during the low water period.

Winter Flow—Relation of gauge height to discharge is affected by ice and measurements are made to determine the winter flow.

Accuracy—Records previous to June 1st, 1915, are not very reliable on account of being affected by backwater from the Grand River. Insufficient records to define rating curve at high stages. Gauge reading discontinued after August 31, 1916.

Observer—H. J. Anderson, Caledonia.

### Discharge Measurements of Boston Creek near York in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 18.... | Cunnington, G... | 42 | 21 | .92 | 600.75 | 19 | ..... |
| 1916 | | | | | | | |
| Apr. 3.... | Roberts, E .... | 79 | 206 | 2.13 | 602.29 | 438 | ..... |
| " 3.... | " .... | 79 | 206 | 2.14 | 602.29 | 440 | ..... |
| " 4.... | " .... | 79 | 190 | 1.65 | 602.00 | 314 | ..... |
| " 4.... | " .... | 79 | 190 | 1.74 | 602.00 | 330 | ..... |

# Daily Gauge Height and Discharge of Boston Creek near York for 1915-6

**Drainage Area, 125 Square Miles**

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 600.75 | 22 | 600.98 | 49 | 601.62 | 66 | 603.33 | 850 | 601.35 | 27 | 602.79 | 635 | 601.21 | 84 | 602.37 | 468 | 600.81 | 28 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 2 | 600.77 | 24 | 601.04 | 58 | 602.58 | 320 | 602.54 | 535 | 601.25 | 22 | 602.58 | 550 | 601.14 | 72 | 602.50 | 520 | 600.77 | 24 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 3 | 600.75 | 22 | 601.04 | 58 | 603.04 | 400 | 602.21 | 404 | 601.17 | 16 | 602.50 | 520 | 101.10 | 66 | 602.54 | 535 | 600.75 | 22 | 600.60 | 7 | ..... | ..... | ..... | ..... |
| 4 | 600.75 | 22 | 601.00 | 52 | 602.83 | 360 | 602.12 | 368 | 601.17 | 22 | 602.04 | 336 | 601.21 | 84 | 602.37 | 468 | 600.75 | 22 | 600.62 | 9 | ..... | ..... | ..... | ..... |
| 5 | 600.75 | 22 | 600.87 | 35 | 602.79 | 320 | 602.21 | 404 | 601.31 | 27 | 601.81 | 244 | 601.33 | 106 | 602.29 | 436 | 600.75 | 22 | 600.62 | 9 | ..... | ..... | ..... | ..... |
| 6 | 600.69 | 15 | 600.92 | 42 | 603.62 | 620 | 602.17 | 388 | 601.42 | 39 | 601.67 | 191 | 601.33 | 106 | 602.00 | 320 | 600.75 | 22 | 600.67 | 13 | ..... | ..... | ..... | ..... |
| 7 | 600.73 | 19 | 600.87 | 35 | 603.42 | 600 | 601.96 | 304 | 601.54 | 52 | 601.54 | 154 | 601.29 | 98 | 602.17 | 388 | 600.75 | 22 | 600.67 | 13 | ..... | ..... | ..... | ..... |
| 8 | 600.75 | 22 | 600.85 | 33 | 603.37 | 540 | 602.50 | 240 | 601.60 | 59 | 601.50 | 144 | 601.21 | 84 | 602.67 | 590 | 600.73 | 19 | 600.67 | 13 | ..... | ..... | ..... | ..... |
| 9 | 600.75 | 22 | 600.87 | 35 | 603.21 | 380 | 602.58 | 200 | 601.54 | 66 | 601.42 | 126 | 601.17 | 77 | 602.62 | 570 | 600.75 | 22 | 600.60 | 7 | ..... | ..... | ..... | ..... |
| 10 | 600.73 | 19 | 601.04 | 58 | 602.37 | 200 | 602.33 | 170 | 601.52 | 66 | 601.42 | 126 | 601.10 | 66 | 602.29 | 400 | 600.69 | 15 | 600.60 | 7 | ..... | ..... | ..... | ..... |
| 11 | 600.67 | 13 | 601.00 | 52 | 601.96 | 185 | 602.08 | 144 | 601.50 | 66 | 601.39 | 119 | 601.46 | 135 | 602.00 | 320 | 600.67 | 13 | 600.64 | 11 | ..... | ..... | ..... | ..... |
| 12 | 600.73 | 19 | 600.96 | 47 | 601.96 | 185 | 601.96 | 100 | 601.50 | 66 | 601.44 | 131 | 601.58 | 165 | 601.71 | 204 | 600.69 | 15 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 13 | 600.75 | 22 | 600.85 | 33 | 602.17 | 280 | 601.98 | 82 | 601.50 | 66 | 601.58 | 165 | 601.56 | 160 | 601.62 | 176 | 600.75 | 22 | 600.60 | 7 | ..... | ..... | ..... | ..... |
| 14 | 600.75 | 22 | 600.87 | 22 | 602.25 | 280 | 601.85 | 66 | 601.67 | 82 | 603.00 | 720 | 601.39 | 119 | 601.62 | 176 | 600.69 | 15 | 600.62 | 9 | ..... | ..... | ..... | ..... |
| 15 | 600.81 | 28 | 600.92 | 22 | 602.75 | 480 | 601.71 | 52 | 601.75 | 91 | 603.04 | 735 | 601.52 | 149 | 601.81 | 244 | 600.67 | 13 | 600.60 | 7 | ..... | ..... | ..... | ..... |
| 16 | 600.73 | 19 | 600.87 | 16 | 602.87 | 600 | 601.62 | 33 | 601.83 | 110 | 602.42 | 488 | 601.79 | 236 | 601.83 | 252 | 600.67 | 13 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 17 | 600.71 | 17 | 600.87 | 12 | 603.29 | 680 | 601.46 | 27 | 601.77 | 110 | 602.17 | 388 | 601.92 | 288 | 601.67 | 191 | 600.67 | 13 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 18 | 600.75 | 22 | 600.85 | 12 | 603.58 | 780 | 601.29 | 22 | 601.75 | 110 | 602.08 | 352 | 601.87 | 268 | 601.37 | 115 | 600.67 | 13 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 19 | 600.94 | 44 | 600.92 | 16 | 603.50 | 760 | 601.25 | 22 | 601.75 | 110 | 601.85 | 260 | 601.69 | 197 | 601.29 | 98 | 600.67 | 13 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 20 | 601.04 | 58 | 601.10 | 33 | 603.12 | 620 | 601.29 | 33 | 601.75 | 110 | 601.62 | 176 | 601.48 | 139 | 601.19 | 80 | 600.67 | 13 | 600.60 | 7 | ..... | ..... | ..... | ..... |
| 21 | 601.58 | 165 | 601.14 | 52 | 602.92 | 560 | 601.44 | 46 | 601.67 | 110 | 601.52 | 149 | 601.33 | 106 | 601.17 | 77 | 600.71 | 17 | 600.67 | 13 | ..... | ..... | ..... | ..... |
| 22 | 601.54 | 154 | 601.29 | 59 | 602.75 | 480 | 601.42 | 33 | 601.62 | 110 | 602.75 | 620 | 601.25 | 91 | 601.17 | 77 | 600.69 | 15 | 600.62 | 9 | ..... | ..... | ..... | ..... |
| 23 | 601.42 | 126 | 601.08 | 39 | 602.92 | 520 | 601.33 | 27 | 601.58 | 110 | 602.62 | 570 | 601.71 | 204 | 601.04 | 58 | 600.67 | 13 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 24 | 601.31 | 102 | 601.08 | 39 | 602.42 | 360 | 601.21 | 22 | 601.58 | 110 | 602.08 | 352 | 601.92 | 288 | 601.00 | 52 | 600.62 | 9 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 25 | 601.19 | 80 | 601.17 | 52 | 601.83 | 252 | 601.12 | 16 | 601.58 | 165 | 601.79 | 236 | 601.83 | 252 | 600.98 | 49 | 600.71 | 17 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 26 | 601.12 | 69 | 601.42 | 82 | 601.67 | 191 | 601.08 | 7 | 602.46 | 505 | 601.67 | 191 | 601.62 | 176 | 600.92 | 42 | 600.69 | 15 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 27 | 601.00 | 52 | 601.42 | 82 | 601.75 | 220 | 601.06 | 12 | 603.67 | 990 | 601.58 | 165 | 601.46 | 135 | 600.83 | 31 | 600.67 | 13 | 600.62 | 9 | ..... | ..... | ..... | ..... |
| 28 | 601.00 | 52 | 601.54 | 91 | 602.00 | 320 | 601.19 | 22 | 604.12 | 1170 | 601.58 | 165 | 601.33 | 106 | 600.87 | 35 | 600.64 | 11 | 600.60 | 7 | ..... | ..... | ..... | ..... |
| 29 | 601.00 | 52 | 601.79 | 110 | 602.29 | 436 | 601.37 | 33 | 603.96 | 1100 | 601.46 | 134 | 601.31 | 102 | 600.83 | 31 | 600.62 | 9 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 30 | 601.00 | 52 | 602.00 | 121 | 601.87 | 268 | ..... | .... | 603.54 | 935 | 601.33 | 106 | 603.17 | 790 | 600.83 | 31 | 600.62 | 9 | 600.58 | 6 | ..... | ..... | ..... | ..... |
| 31 | ..... | ..... | 602.08 | 91 | 602.79 | 236 | ..... | .... | 603.25 | 820 | ..... | ..... | 602.83 | 650 | ..... | .... | 600.62 | 9 | 600.60 | 7 | ..... | ..... | ..... | ..... |

## Monthly Discharge of Boston Creek near York for 1915-6

Drainage Area, 125 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 165 | 13 | 46 | 1.32 | .10 | .37 | .41 |
| December " | 121 | 12 | 50 | .97 | .10 | .40 | .46 |
| January (1916) | 780 | 66 | 403 | 6.24 | .53 | 3.22 | 3.71 |
| February | 850 | 7 | 161 | 6.80 | .06 | 1.29 | 1.39 |
| March | 1,170 | 16 | 240 | 9.36 | .13 | 1.92 | 2.21 |
| April | 735 | 106 | 308 | 5.88 | .85 | 2.46 | 2.74 |
| May | 790 | 66 | 181 | 6.32 | .53 | 1.45 | 1.67 |
| June | 590 | 31 | 234 | 4.72 | .25 | 1.87 | 2.09 |
| July | 28 | 9 | 16 | .22 | .07 | .13 | .15 |
| August | 13 | 6 | 8 | .10 | .05 | .06 | .07 |
| September | | | | | | | |
| October | | | | | | | |
| The period | 1,170 | 7 | 164 | 9.36 | .05 | 1.31 | 14.90 |

NOTE.—Gauge reading discontinued from September 1st, 1916.

## Conestogo River at St. Jacob's

**Location**—At the highway bridge in the Village of St. Jacob's, Township of Woolwich, County of Waterloo.

**Records Available**—July 16, 1913, to August 31, 1916.

**Drainage Area**—305 square miles.

**Gauge**—Vertical steel staff 0 to 3 feet on pile near left bank and 3 to 12 on the right abutment. Elevation of zero on the gauge is 1057.00, which has remained unchanged since established.

**Channel and Control**—The channel is straight for about 500 feet above and 1,000 feet below the gauging section. The banks are low, shifting, and liable to overflow. Fine gravel forms the bed of the stream and is not very permanent. The disposal of garbage from the bridge affects the area of the section to some extent.

**Discharge Measurements**—Made from the bridge during high stages, and at a permanent wading section located 800 feet down stream during the low water period.

**Winter Flow**—The relation of gauge height to discharge is affected by ice during the winter season.

**Regulation**—The Snyder mill is located just above this bridge, and its intermittent operation causes variations in the river stage. During the dry season it is possible, when the dam is closed and flash boards on, to hold back practically all the water for a period of 24 hours.

**Accuracy**—The constantly changing channel and control has necessitated the use of a number of rating curves, and therefore the records cannot be considered very reliable.

**Observer**—A. Niebergall, St. Jacob's.

Gauge reading discontinued after August 31, 1916.

### Discharge Measurements of Conestogo River at St. Jacob's in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 10.... | Roberts, E. .... | 65 | 42 | 1.35 | 1,058.14 | 57 | ..... |
| 1916 | | | | | | | |
| Mar. 31.... | Cunnington, G... | 166 | 949 | 2.88 | 1,061.46 | 2,738 | ..... |
| Apr. 4.... | " .... | 165 | 768 | 1.63 | 1,060.33 | 1,256 | ..... |
| " 4.... | " .... | 165 | 768 | 1.54 | 1,060.21 | 1,181 | ..... |
| " 4.... | " .... | 165 | 751 | 1.62 | 1,060.21 | 1,216 | ..... |
| May 9.... | Roberts, E. .... | 160 | 558 | .64 | 1,059.00 | 359 | ..... |

## Daily Gauge Height and Discharge of Conestogo River at St. Jacobs for 1915-6

Drainage Area 305 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1058.12 | 59 | 1059.46 | 570 | 1058.96 | 220 | 1061.67 | 2950 | 1058.25 | 55 | 1061.71 | 3000 | 1058.56 | 173 | 1058 79 | 252 | 1058.19 | 73 | 1057.77 | 20 | ..... | ..... | ..... | ..... |
| 2 | 1058.04 | 46 | 1059.29 | 475 | 1059.31 | 340 | 1060.27 | 1280 | 1558.37 | 75 | 1061.52 | 2770 | 1058.29 | 98 | 1060.33 | 1350 | 1058.14 | 63 | 1057.56 | 9 | ..... | ..... | ..... | ..... |
| 3 | 1058.04 | 46 | 1059.00 | 340 | 1060.52 | 1310 | 1059.08 | 275 | 1056.33 | 65 | 1060.44 | 1480 | 1059.54 | 620 | 1059.87 | 875 | 1058.08 | 52 | 1057.48 | 6 | ..... | ..... | ..... | ..... |
| 4 | 1058.29 | 98 | 1058.71 | 224 | 1060.60 | 1430 | 1058.64 | 125 | 1058.39 | 75 | 1059.98 | 970 | 1058.92 | 304 | 1959.12 | 2394 | 1058.00 | 40 | 1057.46 | 6 | ..... | ..... | ..... | ..... |
| 5 | 1058.35 | 112 | 1058.71 | 224 | 1062.17 | 2750 | 1058.50 | 100 | 1058.21 | 55 | 1059.54 | 620 | 1058.81 | 259 | 1059.02 | 349 | 1058.04 | 46 | 1057.46 | 6 | ..... | ..... | ..... | ..... |
| 6 | 1058.08 | 52 | 1058.60 | 185 | 1060.46 | 1490 | 1058.33 | 65 | 1058.21 | 55 | 1059.39 | 530 | 1058.67 | 210 | 1058.71 | 224 | 1057.96 | 36 | 1057.42 | 5 | ..... | ..... | ..... | ..... |
| 7 | 1057.92 | 32 | 1058.46 | 143 | 1060.79 | 1310 | 1058.33 | 65 | 1058.37 | 75 | 1059.21 | 435 | 1058.46 | 143 | 1058.56 | 173 | 1057.98 | 38 | 1057.46 | 6 | ..... | ..... | ..... | ..... |
| 8 | 1058.08 | 52 | 1058.48 | 149 | 1060.62 | 1090 | 1058.31 | 65 | 1058.37 | 75 | 1059.14 | 403 | 1059.02 | 349 | 1058.89 | 291 | 1057.85 | 26 | 1057.42 | 5 | ..... | ..... | ..... | ..... |
| 9 | 1058.17 | 69 | 1058.42 | 131 | 1060.23 | 855 | 1058.33 | 65 | 1058.31 | 55 | 1059.04 | 358 | 1059.10 | 385 | 1059.39 | 530 | 1057.87 | 28 | 1057.46 | 6 | ..... | ..... | ..... | ..... |
| 0 | 1058.06 | 49 | 1058.40 | 125 | 1060.83 | 1430 | 1058.52 | 100 | 1058.37 | 75 | 1058.96 | 322 | 1058.56 | 173 | 1060.37 | 1390 | 1057.96 | 36 | 1057.48 | 6 | ..... | ..... | ..... | ..... |
| 1 | 1058.08 | 52 | 1058.29 | 98 | 1060.92 | 1490 | 1058.29 | 55 | 1058.35 | 75 | 1058.58 | 179 | 1058.73 | 230 | 1059.37 | 520 | 1057.83 | 24 | 1057.39 | 4 | ..... | ..... | ..... | ..... |
| 2 | 1058.10 | 55 | 1058.21 | 78 | 1059.02 | 220 | 1058.31 | 55 | 1058.46 | 88 | 1059.28 | 470 | 1058.37 | 118 | 1059.23 | 445 | 1057.73 | 18 | 1057.54 | 9 | ..... | ..... | ..... | ..... |
| 3 | 1057.96 | 36 | 1058.17 | 69 | 1061.69 | 295 | 1058.12 | 40 | 1058.48 | 88 | 1061.52 | 2770 | 1058.44 | 137 | 1059.25 | 455 | 1057.73 | 18 | 1057.48 | 6 | ..... | ..... | ..... | ..... |
| 4 | 1058.10 | 55 | 1058.21 | 78 | 1060.50 | 340 | 1058.29 | 55 | 1058 37 | 75 | 1063.17 | 4750 | 1058.52 | 161 | 1059.04 | 358 | 1057.64 | 13 | 1057.44 | 5 | ..... | ..... | ..... | ..... |
| 5 | 1058.12 | 59 | 1058.29 | 98 | 1060.39 | 295 | 1058.46 | 88 | 1058.44 | 88 | 1062.04 | 3400 | 1058.54 | 167 | 1059.21 | 435 | 1057.69 | 16 | 1057.39 | 4 | ..... | ..... | ..... | ..... |
| 6 | 1058.14 | 63 | 1058.10 | 55 | 1059.04 | 255 | 1058.44 | 88 | 1058.46 | 88 | 1060.46 | 1500 | 1058.35 | 112 | 1059.33 | 496 | 1057.67 | 15 | 1057.37 | 3 | ..... | ..... | ..... | ..... |
| 7 | 1058.12 | 59 | 1058.17 | 69 | 1059.42 | 318 | 1058.42 | 88 | 1058.44 | 88 | 1059.87 | 870 | 1058.14 | 63 | 1059.87 | 875 | 1057.62 | 12 | 1057.39 | 4 | ..... | ..... | ..... | ..... |
| 8 | 1058.08 | 52 | 1058.31 | 102 | 1059.08 | 295 | 1058.39 | 75 | 1058.42 | 88 | 1059.67 | 710 | 1058.48 | 149 | 1060.50 | 1550 | 1057.60 | 11 | 1057.35 | 3 | ..... | ..... | ..... | ..... |
| 9 | 1059.33 | 275 | 1058.27 | 92 | 1058.83 | 255 | 1058.37 | 65 | 1058.37 | 75 | 1060.09 | 1030 | 1058.29 | 98 | 1059.54 | 620 | 1057.83 | 24 | 1057.37 | 3 | ..... | ..... | ..... | ..... |
| 0 | 1059.71 | 480 | 1058.37 | 118 | 1059.75 | 238 | 1058.35 | 65 | 1058.44 | 88 | 1060.42 | 1450 | 1058.23 | 82 | 1059.33 | 496 | 1058.54 | 167 | 1057.35 | 3 | ..... | ..... | ..... | ..... |
| 1 | 1059.69 | 362 | 1058.35 | 112 | 1062.79 | 2750 | 1058.35 | 65 | 1058.50 | 100 | 1060.08 | 1070 | 1058.27 | 92 | 1059.12 | 394 | 1058.94 | 313 | 1057.37 | 3 | ..... | ..... | ..... | ..... |
| 2 | 1059.60 | 220 | 1058.33 | 108 | 1061.87 | 1790 | 1058.44 | 88 | 1058.56 | 112 | 1062.83 | 4350 | 1058.46 | 145 | 1059.23 | 445 | 1058.46 | 143 | 1057.33 | 3 | ..... | ..... | ..... | ..... |
| 3 | 1059.71 | 255 | 1058.42 | 100 | 1060.25 | 480 | 1058.35 | 75 | 1058.54 | 112 | 1060.77 | 1870 | 1058.35 | 112 | 1058.31 | 102 | 1058.31 | 102 | 1057.39 | 4 | ..... | ..... | ..... | ..... |
| 4 | 1058.87 | 185 | 1058.46 | 100 | 1060.62 | 660 | 1058.35 | 75 | 1058.62 | 155 | 1060.89 | 2020 | 1058.29 | 98 | 1058.81 | 259 | 1058.08 | 52 | 1057.31 | 2 | ..... | ..... | ..... | ..... |
| 5 | 1058.96 | 340 | 1058.29 | 65 | 1060.83 | 1090 | 1058.48 | 88 | 1058.73 | 202 | 1060.79 | 1900 | 1058.14 | 63 | 1058.46 | 143 | 1058.04 | 46 | 1057.35 | 3 | ..... | ..... | ..... | ..... |
| 6 | 1060.42 | 1090 | 1058.29 | 65 | 1060.96 | 1670 | 1058.37 | 75 | 1059.14 | 403 | 1059.48 | 585 | 1058.17 | 69 | 1058.96 | 322 | 1057.89 | 29 | 1057.33 | 3 | ..... | ..... | ..... | ..... |
| 7 | 1061.06 | 2220 | 1058.46 | 88 | 1061.08 | 2250 | 1058.42 | 88 | 1060.42 | 1450 | 1060.60 | 1670 | 1058.39 | 122 | 1058.71 | 224 | 1057.83 | 24 | 1057.35 | 3 | ..... | ..... | ..... | ..... |
| 8 | 1060.85 | 1970 | 1058.62 | 125 | 1063.46 | 5120 | 1058.46 | 100 | 1062.48 | 3930 | 1060.96 | 2100 | 1058.33 | 108 | 1058.27 | 93 | 1057.77 | 20 | 1057.42 | 5 | ..... | ..... | ..... | ..... |
| 9 | 1060.21 | 1210 | 1058.60 | 112 | 1063.08 | 4650 | 1058.35 | 75 | 1063.94 | 5680 | 1059.81 | 820 | 1058.46 | 143 | 1058.21 | 77 | 1057.77 | 20 | 1057.39 | 4 | ..... | ..... | ..... | ..... |
| 0 | 1059.37 | 520 | 1058.62 | 125 | 1061.54 | 2800 | ..... | ..... | 1063.08 | 4650 | 1059.37 | 520 | 1060.67 | 1750 | 1058.23 | 82 | 1057.79 | 21 | 1056.44 | 5 | ..... | ..... | ..... | ..... |
| 1 | ..... | ..... | 1058.60 | 125 | 1061.92 | 3250 | ..... | ..... | 1062.87 | 4390 | ..... | ..... | 1059.42 | 545 | ..... | ..... | 1057.81 | 23 | 1057.46 | 6 | ..... | ..... | ..... | ..... |

## Monthly Discharge of Conestogo River at St. Jacobs for 1915-6

Drainage Area 305 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 2,220 | 32 | 339 | 7.28 | .10 | 1.11 | 1.24 |
| December. " | 510 | 55 | 147 | 1.87 | .18 | .48 | .55 |
| January .. (1916) | 5,120 | 220 | 1,379 | 16.79 | .72 | 4.52 | 5.21 |
| February ..... | 2,950 | 40 | 224 | 9.67 | .13 | .73 | .79 |
| March ..... | 5,680 | 55 | 732 | 18.62 | .18 | 2.40 | 2.77 |
| April ..... | 4,350 | 179 | 1,497 | 14.26 | .59 | 4.91 | 5.48 |
| May ..... | 1,750 | 63 | 234 | 5.74 | .21 | .77 | .89 |
| June..... | 1,550 | 77 | 474 | 5.08 | .25 | 1.55 | 1.73 |
| July ..... | 313 | 11 | 50 | 1.03 | .04 | .16 | .18 |
| August ..... | 20 | 2 | 5 | .07 | .01 | .02 | .02 |
| September..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| October ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| The period..... | 5,680 | 2 | 507 | 18.62 | .01 | 1.66 | 18.82 |

Gauge reading discontinued from September 1st, 1916.

## Fairchild's Creek near Onondaga

Location—At the highway bridge called Howell's Bridge, lot 16, concession 3, Township of Onondaga, County of Brant.

Records Available—June 28, 1913, to August 31, 1916.

Drainage Area—115 square miles.

Gauge—Vertical steel staff 0 to 12 feet on left abutment of bridge. Elevation of zero is 621.00.

Channel and Control—Clay and silt decidedly shifting. This section is affected by Grand River backwater during the freshet period.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is affected by ice, and measurements are made to determine the winter discharge.

Accuracy—The records for low flows are good. There are not sufficient records available to define rating curve at intermediate and high stages.

Observer—Gertrude Ludlow, Cainsville P.O.

Gauge readings discontinued after August 31, 1916.

### Discharge Measurements of Fairchild's Creek near Onondaga in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 2.... | Yeates, W. .... | 46 | 26 | [illegible].83 | 622.06 | 21 (a) | ..... |
| 1916 | | | | | | | |
| Mar. 27.... | Roberts. E. .... | 78 | 426 | 1.89 | 629.13 | 866 (b) | ..... |
| July 3.... | Yeates, W, .... | 47 | 28 | .96 | 622.14 | 27 | ..... |

(a) Control has changed since last high water.
(b) Backwater from ice jam.

## Daily Gauge Height and Discharge of Fairchild's Creek near Onondaga for 1915-6

Drainage Area 115 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 622.06 | 27 | 622.48 | 88 | 622.10 | 31 | 630.87 | 1770 | 622.21 | 22 | 629.62 | 1520 | 622.77 | 146 | 623.52 | 296 | 622.09 | 30 | 621.84 | 12 | ..... | ..... | ..... | ..... |
| 2 | 622.08 | 29 | 622.37 | 68 | 622.94 | 180 | 627.08 | 1010 | 622.25 | 26 | 628.08 | 1210 | 622.77 | 146 | 622.85 | 162 | 622.08 | 29 | 621 84 | 12 | ..... | ..... | ..... | ..... |
| 3 | 622.04 | 26 | 622.35 | 64 | 624.44 | 480 | 624.92 | 575 | 622.21 | 22 | 625.69 | 730 | 622.89 | 170 | 622.98 | 188 | 622.08 | 29 | 621.86 | 13 | ..... | ..... | ..... | ..... |
| 4 | 622.04 | 26 | 622.31 | 57 | 623.67 | 326 | 624.50 | 492 | 622.17 | 22 | 624.08 | 408 | 623.50 | 292 | 622.83 | 158 | 622.09 | 30 | 621.86 | 13 | ..... | ..... | ..... | ..... |
| 5 | 622.04 | 26 | 622.42 | 77 | 625.23 | 640 | 624.00 | 392 | 622.17 | 22 | 623.67 | 326 | 623.25 | 242 | 622.69 | 130 | 622 04 | 26 | 621.85 | 12 | ..... | ..... | ..... | ..... |
| 6 | 622.04 | 26 | 622.25 | 48 | 629.92 | 1580 | 623.73 | 338 | 622.17 | 22 | 623.67 | 326 | 623.00 | 192 | 622.58 | 108 | 622.04 | 26 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 7 | 622.04 | 26 | 622.27 | 51 | 629.79 | 1550 | 623.42 | 262 | 622.27 | 26 | 623.50 | 292 | 622.92 | 176 | 622.58 | 108 | 622.01 | 23 | 621.85 | 12 | ..... | ..... | ..... | ..... |
| 8 | 622.02 | 24 | 622.23 | 46 | 629.04 | 1400 | 623.21 | 192 | 622.48 | 31 | 623.50 | 292 | 622.87 | 166 | 624.02 | 396 | 622.00 | 22 | 651 85 | 12 | ..... | ..... | ..... | ..... |
| 9 | 622.04 | 26 | 622.29 | 54 | 627.42 | 1080 | 622.89 | 132 | 622.64 | 64 | 623.67 | 326 | 622.89 | 170 | 623.08 | 208 | 622.00 | 22 | 621.85 | 12 | ..... | ..... | ..... | ..... |
| 10 | 622.04 | 26 | 622.46 | 84 | 626.31 | 855 | 622.71 | 92 | 622.98 | 142 | 623.83 | 358 | 622.85 | 162 | 622.81 | 154 | 622.00 | 22 | 621.85 | 12 | ..... | ..... | ..... | ..... |
| 11 | 622.02 | 24 | 622.25 | 48 | 625.94 | 780 | 622.71 | 102 | 622.89 | 132 | 623.67 | 326 | 623.19 | 230 | 623.02 | 196 | 622.00 | 22 | 621.85 | 12 | ..... | ..... | ..... | ..... |
| 12 | 622.04 | 24 | 622.10 | 31 | 625.25 | 640 | 622.64 | 73 | 622.81 | 112 | 623.67 | 326 | 622.98 | 188 | 622.81 | 154 | 622.00 | 22 | 621.92 | 16 | ..... | ..... | ..... | ..... |
| 13 | 622.06 | 27 | 622.12 | 33 | 627.87 | 1170 | 622.54 | 55 | 622.73 | 102 | 623.87 | 366 | 622.73 | 138 | 622.67 | 126 | 621.96 | 19 | 621.92 | 16 | ..... | ..... | ..... | ..... |
| 14 | 622.04 | 26 | 622.00 | 22 | 628.00 | 1190 | 622.48 | 48 | 622.81 | 132 | 627.75 | 1140 | 622.69 | 130 | 622.54 | 100 | 621.96 | 19 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 15 | 622.01 | 23 | 622.00 | 22 | 626.50 | 890 | 622.42 | 42 | 622.96 | 152 | 628.12 | 1220 | 624.31 | 454 | 622.60 | 112 | 621.95 | 18 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 16 | 622.00 | 22 | 621.96 | 19 | 626.50 | 890 | 622.37 | 36 | 622.96 | 152 | 625.02 | 595 | 625.00 | 592 | 622.60 | 112 | 621.93 | 17 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 17 | 622.06 | 27 | 621.98 | 21 | 624.23 | 438 | 622.43 | 48 | 622.75 | 112 | 624.52 | 496 | 623.69 | 330 | 622.52 | 96 | 621.97 | 20 | 621.84 | 12 | ..... | ..... | ..... | ..... |
| 18 | 622.06 | 27 | 622.06 | 27 | 623.62 | 316 | 622.42 | 42 | 622.54 | 92 | 624.81 | 555 | 623.33 | 258 | 622.52 | 96 | 621.92 | 16 | 621.85 | 12 | ..... | ..... | ..... | ..... |
| 19 | 622.12 | 33 | 622.14 | 35 | 623.25 | 242 | 622.46 | 48 | 622.39 | 55 | 623.75 | 342 | 622.89 | 170 | 622.58 | 108 | 621.94 | 18 | 621.84 | 12 | ..... | ..... | ..... | ..... |
| 20 | 622.79 | 150 | 622.17 | 39 | 623.23 | 238 | 622.42 | 42 | 622.31 | 42 | 623.90 | 372 | 622.81 | 154 | 622.56 | 104 | 621.92 | 16 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 21 | 622.81 | 154 | 622.12 | 33 | 623.08 | 208 | 622.39 | 36 | 622.25 | 36 | 624.00 | 392 | 622.71 | 134 | 622.46 | 84 | 621.94 | 18 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 22 | 622.62 | 116 | 622.08 | 29 | 626.00 | 792 | 622.31 | 31 | 622.25 | 31 | 625.52 | 695 | 622.67 | 126 | 622.39 | 71 | 621.94 | 18 | 621.94 | 18 | ..... | ..... | ..... | ..... |
| 23 | 622.46 | 84 | 622.04 | 26 | 628.04 | 1200 | 622.25 | 26 | 622.29 | 31 | 627.04 | 1000 | 625.58 | 708 | 622.31 | 57 | 621.92 | 16 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 24 | 622.37 | 68 | 622.06 | 27 | 628.92 | 1380 | 622.31 | 31 | 622.29 | 42 | 624.58 | 510 | 624.10 | 412 | 622.29 | 54 | 621.92 | 16 | 621.92 | 16 | ..... | ..... | ..... | ..... |
| 25 | 622.37 | 68 | 622.14 | 35 | 626.75 | 940 | 622.35 | 31 | 622.42 | 64 | 623.69 | 330 | 622.98 | 188 | 622.48 | 88 | 621.89 | 14 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 26 | 622.35 | 64 | 622.10 | 31 | 625.64 | 720 | 622.27 | 26 | 624.29 | 450 | 623.44 | 280 | 622.64 | 120 | 622.50 | 92 | 621.89 | 14 | 621.86 | 13 | ..... | ..... | ..... | ..... |
| 27 | 622.36 | 66 | 622.12 | 33 | 625.73 | 740 | 622.27 | 26 | 629.12 | 1420 | 623.75 | 342 | 622.75 | 142 | 622.35 | 64 | 621.89 | 14 | 621.89 | 14 | ..... | ..... | ..... | ..... |
| 28 | 622.50 | 92 | 622.14 | 35 | 628.08 | 1210 | 622.29 | 26 | 630.75 | 1740 | 623.10 | 212 | 623.37 | 266 | 622.23 | 46 | 621.89 | 14 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 29 | 622.58 | 108 | 622.17 | 39 | 628.58 | 1310 | 622.21 | 22 | 633.00 | 2190 | 622.98 | 188 | 623.23 | 238 | 622.15 | 36 | 621.87 | 14 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 30 | 622.58 | 108 | 622.08 | 29 | 624.87 | 565 | ..... | ..... | 634.00 | 2390 | 622.87 | 166 | 626.06 | 804 | 622.12 | 33 | 621.87 | 14 | 621.87 | 13 | ..... | ..... | ..... | ..... |
| 31 | ..... | ..... | 622.08 | 29 | 628.12 | 1220 | ..... | ..... | 631.54 | 1900 | ..... | ..... | 625.33 | 660 | ..... | .... | 621.87 | 14 | 621.86 | 13 | ..... | ..... | ..... | ..... |

## Monthly Discharge of Fairchild's Creek near Onondaga for 1915-6

Drainage Area, 115 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 154 | 22 | 52 | 1.34 | .19 | .45 | .50 |
| December " | 88 | 19 | 41 | .77 | .17 | .36 | .42 |
| January.. (1916) | 1,580 | 31 | 813 | 13.47 | .27 | 7.07 | 8.15 |
| February..... | 1,770 | 22 | 208 | 15.39 | .19 | 1.81 | 1.96 |
| March..... | 2,390 | 22 | 380 | 20.78 | .19 | 3.30 | 3.80 |
| April..... | 1,520 | 166 | 521 | 13.21 | 1.44 | 4.53 | 5.05 |
| May..... | 804 | 120 | 268 | 6.99 | 1.04 | 2.33 | 2.69 |
| June ..... | 396 | 33 | 125 | 3.44 | .29 | 1.09 | 1.22 |
| July..... | 30 | 14 | 20 | .26 | .12 | .17 | .20 |
| August..... | 18 | 12 | 13 | .16 | .10 | .11 | .13 |
| September..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| October ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| The period..... | 2,390 | 12 | 245 | 20.78 | .10 | 2.12 | 24.05 |

Gauge reading discontinued from September 1st, 1916.

## Galt Creek at Galt

**Location**—At the Kerr Street Bridge in the City of Galt, Township of North Dumfries, County of Waterloo.

**Records Available**—July 9, 1913, to August 31, 1916.

**Drainage Area**—45 square miles.

**Gauge**—Vertical steel staff 0 to 9 feet on the right abutment of bridge. Elevation of zero on gauge is 893.00, which has remained unchanged since established.

**Channel and Control**—The channel is straight for 500 feet above and below section. The river bed and banks are both practically permanent. It is bounded on both sides by the G.T.R. and C.P.R.

**Discharge Measurements**—Made from the upstream side of the bridge at all stages.

**Winter Flow**—The relation of gauge height to discharge is affected by ice during the winter months, and measurements are made to determine the winter flow.

**Accuracy**—The rating curve is fairly well defined, and the records can be classed as good.

**Observer**—Charles Parker, Galt.

Gauge readings discontinued after August 31, 1916.

### Discharge measurements of Galt Creek at Galt in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Dec. 21.... | Yeates, W.... | 18 | 9 | 2.13 | 893.79 | 19 (a) | ..... |
| 1916 | | | | | | | |
| Apr. 6.... | Cunnington, G... | 24 | 35 | 2.78 | 894.17 | 98 | ..... |
| " 6.... | " .... | 24 | 36 | 2.69 | 894.17 | 96 | ..... |
| " 6.... | " .... | 24 | 36 | 2.88 | 894.17 | 104 | ..... |

(a) Ice on section; ice jam below section.

## Daily Gauge Height and Discharge of Galt Creek at Galt for 1915-6

Drainage Area 45 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 893.43 | 18 | 893.75 | 45 | 894.06 | 40 | 894.58 | 171 | 893.54 | 12 | 894.92 | 239 | 893.67 | 37 | 894.29 | 117 | 893.46 | 20 | 893.30 | 12 | ..... | ..... | ..... | ..... |
| 2 | 893.44 | 18 | 893.56 | 27 | 894.19 | 45 | 894.56 | 167 | 893.56 | 14 | 894.79 | 213 | 893.89 | 61 | 894.12 | 91 | 893.42 | 17 | 893.27 | 11 | ..... | ..... | ..... | ..... |
| 3 | 893.45 | 19 | 893.58 | 29 | 894.31 | 50 | 894.44 | 145 | 893.48 | 10 | 894.46 | 148 | 894.00 | 74 | 893.96 | 69 | 893.46 | 20 | 893.25 | 11 | ..... | ..... | ..... | ..... |
| 4 | 893.44 | 18 | 893.54 | 26 | 894.33 | 56 | 894.58 | 137 | 893.54 | 12 | 894.12 | 91 | 894.08 | 85 | 993.75 | 45 | 893.46 | 20 | 893.27 | 11 | ..... | ..... | ..... | ..... |
| 5 | 893.44 | 18 | 893.46 | 20 | 894.39 | 68 | 894.77 | 119 | 893.46 | 10 | 894.12 | 91 | 894.04 | 80 | 893.69 | 39 | 893.44 | 18 | 893.31 | 12 | ..... | ..... | ..... | ..... |
| 6 | 893.44 | 18 | 893.52 | 24 | 894.44 | 74 | 894.96 | 111 | 893.48 | 12 | 894.12 | 91 | 893.96 | 69 | 893.71 | 41 | 893.43 | 18 | 893.29 | 12 | ..... | ..... | ..... | ..... |
| 7 | 893.43 | 18 | 893.54 | 26 | 894.46 | 74 | 895.37 | 119 | 893.42 | 10 | 894.04 | 80 | 893.85 | 56 | 893.87 | 58 | 893.53 | 25 | 893.33 | 13 | ..... | ..... | ..... | ..... |
| 8 | 893.43 | 18 | 893.51 | 23 | 894.35 | 68 | 895.69 | 96 | 893.46 | 10 | 893.87 | 58 | 893.81 | 51 | 894.04 | 80 | 893.39 | 16 | 893.31 | 12 | ..... | ..... | ..... | ..... |
| 9 | 893.35 | 14 | 893.52 | 24 | 894.21 | 56 | 895.83 | 96 | 893.58 | 12 | 893.75 | 45 | 893.69 | 39 | 894.10 | 88 | 893.39 | 16 | 893.33 | 13 | .... | ..... | ..... | ..... |
| 10 | 893.36 | 14 | 893.89 | 61 | 894.14 | 40 | 896.12 | 96 | 893.46 | 9 | 893.75 | 45 | 893.77 | 47 | 894.02 | 77 | 893.51 | 23 | 893.33 | 13 | ..... | ..... | ..... | ..... |
| 11 | 893.40 | 16 | 893.94 | 40 | 894.14 | 45 | 895.96 | 96 | 893.44 | 8 | 893.71 | 41 | 893.73 | 43 | 893.92 | 64 | 893.44 | 18 | 893.39 | 16 | ..... | ..... | ..... | ..... |
| 12 | 893.48 | 21 | 893.96 | 31 | 894.19 | 45 | 895.71 | 96 | 893.54 | 12 | 893.81 | 51 | 893.69 | 39 | 893.81 | 51 | 893.52 | 24 | 893.33 | 13 | ..... | ..... | ..... | ..... |
| 13 | 893.45 | 19 | 893.85 | 22 | 894.48 | 56 | 895.54 | 96 | 893.73 | 22 | 894.21 | 105 | 893.67 | 37 | 893.67 | 37 | 893.58 | 29 | 893.42 | 17 | ..... | ..... | ..... | ..... |
| 14 | 893.46 | 19 | 893.77 | 16 | 894.67 | 62 | 895.04 | 96 | 893.73 | 22 | 894.58 | 171 | 893.71 | 41 | 893.77 | 47 | 893.52 | 24 | 893.27 | 11 | ..... | ..... | ..... | ..... |
| 15 | 893.50 | 22 | 893.73 | 12 | 894.64 | 62 | 895.04 | 96 | 893.60 | 14 | 894.62 | 179 | 893.81 | 51 | 894.04 | 80 | 893.43 | 18 | 893.25 | 11 | ..... | ..... | ..... | ..... |
| 16 | 893.48 | 21 | 893.64 | 12 | 894.50 | 45 | 895.04 | 96 | 893.44 | 12 | 894.37 | 132 | 894.10 | 88 | 893.92 | 64 | 893.35 | 14 | 893.25 | 11 | ..... | ..... | ..... | ..... |
| 17 | 893.42 | 17 | 893.71 | 14 | 894.37 | 31 | 895.00 | 96 | 893.44 | 12 | 894.37 | 132 | 894.21 | 105 | 894.08 | 85 | 893.35 | 14 | 893.28 | 11 | ..... | ..... | ..... | ..... |
| 18 | 893.44 | 18 | 893.64 | 12 | 894.12 | 26 | 894.92 | 96 | 893.40 | 10 | 894.33 | 124 | 894.12 | 91 | 894.04 | 80 | 893.31 | 12 | 893.27 | 11 | ..... | ..... | ..... | ..... |
| 19 | 893.53 | 25 | 893.64 | 12 | 894.04 | 22 | 894.64 | 96 | 893.39 | 10 | 894.25 | 111 | 893.98 | 72 | 893.92 | 64 | 893.35 | 14 | 893.25 | 11 | ..... | ..... | ..... | ..... |
| 20 | 893.77 | 47 | 898.96 | 26 | 893.77 | 31 | 894.37 | 74 | 893.50 | 14 | 894.08 | 85 | 893.77 | 47 | 893.87 | 58 | 893.37 | 15 | 893.25 | 11 | ..... | ..... | ..... | ..... |
| 21 | 893.96 | 69 | 893.81 | 19 | 893.69 | 39 | 894.04 | 40 | 893.54 | 26 | 893.89 | 61 | 893.75 | 45 | 893.79 | 49 | 893.37 | 15 | 893.27 | 11 | ..... | ..... | ..... | ..... |
| 22 | 893.85 | 56 | 893.75 | 14 | 894.48 | 152 | 894.17 | 50 | 893.60 | 31 | 894.04 | 80 | 893.87 | 58 | 893.73 | 43 | 893.31 | 12 | 893.33 | 13 | ..... | ..... | ..... | ..... |
| 23 | 893.83 | 54 | 893.71 | 12 | 894.75 | 205 | 893.87 | 56 | 893.73 | 43 | 894.31 | 121 | 894.08 | 85 | 893.48 | 21 | 893.27 | 11 | 893.46 | 20 | ..... | ..... | ..... | ..... |
| 24 | 893.69 | 39 | 893.81 | 14 | 894.71 | 197 | 893.69 | 16 | 893.87 | 58 | 894.17 | 98 | 894.17 | 98 | 893.48 | 21 | 893.25 | 10 | 893.28 | 11 | ..... | ..... | ..... | ..... |
| 25 | 893.67 | 37 | 893.85 | 16 | 894.46 | 148 | 893.73 | 19 | 894.00 | 74 | 894.21 | 105 | 894.12 | 91 | 893.62 | 33 | 893.31 | 12 | 893.31 | 12 | ..... | ..... | ..... | ..... |
| 26 | 893.58 | 29 | 894.04 | 22 | 894.21 | 105 | 893.67 | 16 | 894.08 | 85 | 894.08 | 85 | 893.83 | 54 | 893.60 | 31 | 893.31 | 12 | 893.31 | 12 | ..... | ..... | ..... | ..... |
| 27 | 893.60 | 31 | 894.02 | 19 | 894.25 | 111 | 893.71 | 19 | 894.71 | 197 | 894.17 | 98 | 893.96 | 69 | 893.64 | 35 | 893.31 | 12 | 893.29 | 12 | ..... | ..... | ..... | ..... |
| 28 | 893.59 | 30 | 893.96 | 16 | 894.75 | 205 | 893.92 | 22 | 895.04 | 263 | 894.08 | 85 | 894.10 | 88 | 893.62 | 33 | 893.29 | 12 | 893.23 | 10 | ..... | ..... | ..... | ..... |
| 29 | 893.68 | 38 | 894.06 | 22 | 894.77 | 209 | 893.62 | 14 | 895.42 | 339 | 894.04 | 80 | 894.25 | 111 | 893.56 | 27 | 893.33 | 13 | 893.27 | 11 | ..... | ..... | ..... | ..... |
| 30 | 893.73 | 43 | 894.23 | 31 | 894.46 | 148 | ..... | .... | 895.37 | 329 | 893.85 | 56 | 894.37 | 132 | 893.52 | 24 | 893.27 | 11 | 893.25 | 11 | ..... | ..... | ..... | ..... |
| 31 | ..... | ..... | 894.04 | 19 | 894.50 | 156 | ..... | .... | 395.17 | 289 | ..... | .... | 894.52 | 160 | ..... | .... | 893.31 | 12 | 893.27 | 11 | ..... | ..... | ..... | ..... |

## Monthly Discharge of Galt Creek at Galt for 1915-6

Drainage Area, 45 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inche on Drainage Area |
| November (1915) | 69 | 14 | 27 | 1.53 | .31 | .60 | .67 |
| December. " | 61 | 12 | 23 | 1.36 | .27 | .51 | .59 |
| January .. (1916) | 209 | 22 | 86 | 4.64 | .49 | 1.91 | 2.20 |
| February ..... | 171 | 14 | 81 | 3.80 | .31 | 1.80 | 1.94 |
| March..... | 339 | 8 | 64 | 7.53 | .18 | 1.42 | 1.64 |
| April..... | 239 | 41 | 103 | 5.31 | .91 | 2.29 | 2.55 |
| May..... | 160 | 37 | 71 | 3.56 | .82 | 1.58 | 1.82 |
| June ..... | 117 | 21 | 55 | 2.60 | .47 | 1.22 | 1.36 |
| July..... | 29 | 10 | 16 | .64 | .22 | .36 | .42 |
| August ..... | 20 | 10 | 12 | .44 | .22 | .27 | .31 |
| September..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| October..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| The period ..... | 339 | 8 | 54 | 7.53 | .18 | 1.20 | 13.61 |

Gauge reading discontinued from September 1st, 1916.

## Irvine River near Salem

Location—At the highway bridge known as Watt's Bridge about 1½ miles above Salem on the blind line between the 11th and 12th concessions, lot 14, Township of Nichol, County of Wellington.

Records Available—Old section, July to October, 1913; present section, November 1, 1913, to August 31, 1916.

Drainage Area—67 square miles.

Gauge—Vertical steel staff 0 to 9 feet attached to the centre pier of bridge. Elevation of zero on gauge is 1297.00, which has remained unchanged since established.

Channel and Control—The river bed and banks are composed of solid rock, and consequently permanent.

Discharge Measurements—During the flood of 1914 an attempt was made to obtain a meter reading from the bridge, but owing to a velocity of about 14 feet per second it was found impossible to keep the meter in the water. During the low stages a permanent wading section is located 100 feet upstream.

Winter Flow—The relation of gauge height to discharge is somewhat affected when ice is present at the station. Meter measurements are made during that period to determine the winter discharge.

Accuracy—The open channel rating curve is well defined up to gauge height 1289.50 feet, and records of discharge up to 400 sec. feet are good.

Observer—Annie Barber, Salem.

Gauge reading discontinued after August 31, 1916.

### Discharge Measurements of Irvine River near Salem in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 10.... | Roberts, E .... | 44 | 15 | 1.00 | 1,297.42 | 15 (a) | ..... |
| 1916 | | | | | | | ..... |
| Apr. 1.... | Cunnington, G.. | 77 | 134 | 7.60 | 1,299.08 | 1,019 | ..... |
| May 9.... | Roberts, E. .... | 47 | 28 | 2.43 | 1,297.77 | 68 | ..... |

(a) Rocks affect accuracy of reading.

# Daily Gauge Height and Discharge of Irvine River near Salem for 1915-6

Drainage Area, 67 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1297.54 | 32 | 1298.06 | 27 | 1297.93 | 8 | 1299.17 | 470 | 1297.45 | 8 | 1299.04 | 950 | 1297.83 | 79 | 1297.84 | 81 | 1297.39 | 16 | 1297.08 | 2 | ..... | .... | ..... | .... |
| 2 | 1297.51 | 28 | 1298.00 | 27 | 1298.17 | 5 | 1298.75 | 120 | 1297.43 | 8 | 1298.71 | 480 | 1298.00 | 120 | 1297.87 | 87 | 1297.37 | 15 | 1297.08 | 2 | ..... | .... | ..... | .... |
| 3 | 1297.48 | 25 | 1297.98 | 27 | 1298.50 | 72 | 1298.75 | 107 | 1297.42 | 8 | 1298.33 | 234 | 1298.17 | 175 | 1298.04 | 132 | 1297.37 | 15 | 1297.08 | 2 | ..... | .... | ..... | .... |
| 4 | 1297.49 | 26 | 1297.96 | 27 | 1298.25 | 54 | 1298.75 | 94 | 1297.42 | 8 | 1298.33 | 234 | 1298.21 | 188 | 1297.87 | 87 | 1297.35 | 14 | 1297.08 | 2 | ..... | .... | ..... | .... |
| 5 | 1297.50 | 27 | 1297.96 | 27 | 1298.17 | 39 | 1299.12 | 94 | 1297.42 | 8 | 1298.33 | 234 | 1297.99 | 117 | 1298.04 | 132 | 1297.34 | 13 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 6 | 1297.50 | 27 | 1297.93 | 27 | ..... | 39 | 1299.25 | 94 | 1297.42 | 8 | 1298.12 | 157 | 1297.81 | 74 | 1297.96 | 110 | 1297.27 | 9 | 1297.04 | 1 | ..... | .... | ..... | .... |
| 7 | 1297.50 | 27 | 1297.85 | 27 | ..... | 39 | 1299.08 | 83 | 1297.50 | 10 | 1297.87 | 87 | 1297.64 | 45 | 1297.89 | 92 | 1297.25 | 8 | 1297.04 | 1 | ..... | .... | ..... | .... |
| 8 | 1297.50 | 27 | 1297.74 | 27 | ..... | 39 | 1299.00 | 72 | 1297.50 | 10 | 1297.42 | 19 | 1297.62 | 42 | 1297.87 | 87 | 1297.25 | 8 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 9 | 1297.49 | 26 | 1297.69 | 22 | ..... | 39 | 1298.96 | 54 | 1297.50 | 10 | 1297.29 | 10 | 1297.67 | 50 | 1298.12 | 157 | 1297.25 | 8 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 10 | 1297.44 | 21 | 1297.65 | 10 | ..... | 39 | 1298.85 | 39 | 1297.50 | 10 | 1298.00 | 120 | 1297.87 | 87 | 1298.17 | 175 | 1297.22 | 6 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 11 | 1297.40 | 17 | 1298.37 | 10 | ..... | 39 | 1298.77 | 27 | 1297.50 | 10 | 1298.08 | 144 | 1298.00 | 120 | 1298.10 | 150 | 1297.17 | 4 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 12 | 1297.39 | 16 | 1298.42 | 10 | 1298.25 | 27 | 1298.62 | 17 | 1297.50 | 10 | 1298.17 | 176 | 1297.82 | 76 | 1297.97 | 112 | 1297.17 | 4 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 13 | 1297.37 | 15 | 1297.75 | 10 | 1298.44 | 27 | 1298.31 | 10 | 1297.50 | 10 | 1299.25 | 1300 | 1297.71 | 56 | 1297.85 | 83 | 1297.17 | 4 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 14 | 1297.35 | 13 | 1297.75 | 10 | 1298.54 | 27 | 1298.17 | 10 | 1297.50 | 10 | 1300.46 | 3362 | 1297.69 | 52 | 1297.94 | 104 | 1297.17 | 4 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 15 | 1297.44 | 21 | 1297.75 | 10 | 1298.52 | 27 | 1298.04 | 10 | 1297.50 | 10 | 1298.83 | 615 | 1297.83 | 79 | 1300.08 | 2720 | 1297.17 | 4 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 16 | 1297.48 | 25 | 1297.62 | 10 | 1298.67 | 17 | 1297.87 | 10 | 1297.50 | 10 | 1298.37 | 252 | 1297.85 | 83 | 1299.04 | 950 | 1297.17 | 4 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 17 | 1297.52 | 29 | 1297.64 | 10 | 1299.17 | 10 | 1297.64 | 10 | 1297.50 | 10 | 1298.75 | 520 | 1298.00 | 120 | 1298.33 | 234 | 1297.17 | 4 | 1297.04 | 2 | ..... | .... | ..... | .... |
| 18 | 1297.54 | 32 | 1297.71 | 10 | 1299.17 | 10 | 1297.58 | 10 | 1297.50 | 10 | 1298.52 | 333 | 1297.87 | 87 | 1298.27 | 210 | 1297.17 | 4 | 1297.04 | 1 | ..... | .... | ..... | .... |
| 19 | 1298 12 | 46 | 1297.67 | 10 | 1299.04 | 10 | 1297.58 | 10 | 1297.52 | 14 | 1298.31 | 224 | 1297.80 | 72 | 1298.04 | 132 | 1297.17 | 4 | 1297.02 | 1 | ..... | .... | ..... | .... |
| 20 | 1298.48 | 54 | 1297.65 | 10 | 1298.92 | 22 | 1297.54 | 10 | 1297.58 | 14 | 1299.00 | 880 | 1297.75 | 63 | 1297.9 | 100 | 1297.17 | 4 | 1297.01 | 1 | ..... | .... | ..... | .... |
| 21 | 1298.04 | 54 | 1297.63 | 10 | 1298.96 | 39 | 1297.50 | 10 | 1297.54 | 14 | 1298.46 | 298 | 1297.62 | 42 | 1297.79 | 70 | 1297.24 | 7 | 1297.00 | 1 | ..... | .... | ..... | .... |
| 22 | 1298.00 | 39 | 1297.58 | 10 | 1299.75 | 575 | 1297.50 | 10 | 1297.50 | 10 | 1300.17 | 2870 | 1297.74 | 61 | 1297.62 | 42 | 1297.19 | 5 | 1297.00 | 1 | ..... | .... | ..... | .... |
| 23 | 1297.98 | 27 | 1297.58 | 10 | 1299.25 | 385 | 1297.50 | 10 | 1297.50 | 10 | 1298.96 | 810 | 1297.85 | 83 | 1297.49 | 26 | 1297.17 | 4 | 1297.00 | 1 | ..... | .... | ..... | .... |
| 24 | 1297.94 | 17 | 1297.58 | 10 | 1298.67 | 242 | 1297.50 | 10 | 1297.50 | 10 | 1298.42 | 276 | 1297.81 | 74 | 1297.69 | 52 | 1297.17 | 4 | 1297.00 | 1 | ..... | .... | ..... | .... |
| 25 | 1298.00 | 22 | 1297.62 | 10 | 1298.75 | 265 | 1297.50 | 10 | 1297.50 | 10 | 1298.27 | 210 | 1297.71 | 56 | 1297.87 | 87 | 1297.17 | 4 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 26 | 1298.46 | 27 | 1297.67 | 10 | 1298.75 | 265 | 1297.50 | 10 | 1297.56 | 27 | 1299.04 | 950 | 1297.60 | 39 | 1297.71 | 56 | 1297.17 | 4 | 1297.06 | 2 | ..... | .... | ..... | .... |
| 27 | 1298.83 | 320 | 1297.69 | 10 | 1299.58 | 880 | 1297.50 | 10 | 1298.83 | 615 | 1298.89 | 695 | 1297.67 | 50 | 1297.61 | 40 | 1297.12 | 3 | 1297.08 | 2 | ..... | .... | ..... | .... |
| 28 | 1298.77 | 265 | 1297.75 | 10 | 1300.50 | 3430 | 1297.50 | 8 | 1299.54 | 1800 | 1298.33 | 234 | 1297.75 | 63 | 1297.53 | 31 | 1297.09 | 2 | 1297.08 | 2 | ..... | .... | ..... | .... |
| 29 | 1298.69 | 150 | 1297.83 | 10 | 1299.62 | 1930 | 1297.47 | 8 | 1300.19 | 2900 | 1297.81 | 74 | 1297.75 | 63 | 1297.47 | 24 | 1297.08 | 2 | 1297.08 | 2 | ..... | .... | ..... | .... |
| 30 | 1298.42 | 94 | 1297.92 | 10 | 1299.62 | 1930 | ..... | .... | 1299.96 | 2510 | 1297.62 | 42 | 1298.33 | 234 | 1297.42 | 19 | 1297.08 | 2 | 1297.08 | 2 | ..... | .... | ..... | .... |
| 31 | ..... | .... | 1297.87 | 10 | 1299.79 | 1220 | ..... | .... | 1299.14 | 1120 | ..... | .... | 1297.98 | 114 | ..... | .... | 1297.08 | 2 | 1297.06 | 2 | ..... | .... | ..... | .... |

## Monthly Discharge of Irvine River near Salem for 1915-6

Drainage Area 67 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 320 | 13 | 54 | 4.78 | .19 | .81 | .90 |
| December " | 27 | 10 | 15 | .40 | .15 | .22 | .25 |
| January (1916) | 3,430 | 5 | 461 | 51.19 | .07 | 5.67 | 6.54 |
| February | 470 | 8 | 50 | 7.01 | .12 | .75 | .81 |
| March | 2,900 | 8 | 297 | 43.28 | .12 | 4.43 | 5.11 |
| April | 3,362 | 10 | 560 | 50.18 | .15 | 8.36 | 9.33 |
| May | 234 | 39 | 86 | 3.49 | .58 | 1.28 | 1.48 |
| June | 2,720 | 19 | 213 | 40.60 | .28 | 3.18 | 3.55 |
| July | 16 | 2 | 6 | .24 | .03 | .09 | .10 |
| August | 2 | 1 | 2 | .03 | .02 | .03 | .03 |
| September | | | | | | | |
| October | | | | | | | |
| The period | 3,430 | 1 | 166 | 51.19 | .02 | 2.49 | 28.10 |

Gauge reading discontinued from September 1st, 1916.

## Nith River near Canning

Location—At the highway bridge 200 feet upstream from the Grand Trunk Railway bridge, lot 2, concession 2, Township of Blenheim, County of Oxford, 1 mile from the Village of Canning.

Records Available—July 5, 1913, to October 31, 1916.

Drainage Area—365 square miles.

Gauge—Vertical steel staff 0 to 3 feet on pile in centre of stream and 3 to 12 feet on left abutment. Elevation of zero on gauge is 799.00, which has remained unchanged since established.

Channel and Control—Slightly shifting bed; both banks permanent under ordinary conditions. Control only affected by ice jams during the early freshet.

Discharge Measurements—Made from the bridge during high-water stages, and from a permanent wading section 100 feet above during the low-water period.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter, and measurements are made to determine the winter flow.

Regulation—Fluctuations of a serious nature occur in the river stage at this section, caused through the intermittent operation of the milling plant at Canning, 1½ miles above.

Accuracy—On account of stage variations, these records are not very reliable.

Observer—Lewis Baker, Canning P.O.

### Discharge Measurements of Nith River near Canning in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 5.... | Yeates, W..... | 93 | 76 | 1.72 | 801.21 | 131 | ..... |
| " 23.... | Cunnington, G... | 95 | 139 | 3.30 | 802.21 | 459 | ..... |
| Dec. 20.... | Yeates, W..... | 95 | 142 | 1.39 | 802.54 | 197 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 26.... | " ..... | 119 | 388 | 3.30 | 803.76 | 1,277 (b) | ..... |
| " 31.... | Roberts, E. .... | 125 | 517 | 4.03 | 804.75 | 2,083 (c) | ..... |
| Mar. 28.... | Yeates, W..... | 126 | 568 | 4.03 | 805.12 | 2,287 (d) | ..... |
| Apr. 2.... | Roberts, E..... | 125 | 567 | 4.22 | 805.10 | 2,396 | ..... |
| " 7.... | Cunnington, G... | 114 | 263 | 2.24 | 802.62 | 588 | ..... |
| " 7.... | " .. | 114 | 263 | 2.45 | 802.62 | 645 | ..... |
| " 7.... | " .. | 114 | 263 | 2.23 | 802.67 | 587 | ..... |
| July 4.... | Yeates, W..... | 92 | 75 | 1.63 | 801.07 | 122 | ..... |

(a) Ice on control.
(b) Ice below section.
(c) Ice on both sides of section.
(d) Ice on sides below section.

## Daily Gauge Height and Discharge of Nith River near Canning for 1915-6

Drainage Area, 365 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 801.25 | 158 | 802.96 | 910 | 803.23 | 230 | 806.00 | 2480 | ..... | 610 | 805.12 | 2340 | 802.02 | 434 | 803.35 | 1120 | 801.71 | 299 | 801.04 | 116 | 800.67 | 72 | 800.98 | 107 |
| 2 | 801.23 | 152 | 802.37 | 605 | 803.42 | 315 | 804.58 | 1380 | ..... | 610 | 804.85 | 2120 | 802.37 | 605 | 802.60 | 720 | 801.73 | 307 | 800.96 | 104 | 800.73 | 78 | 800.77 | 82 |
| 3 | 801.10 | 125 | 802.04 | 443 | 804.42 | 425 | 803.02 | 670 | ..... | 610 | 803.96 | 1480 | 802.25 | 545 | 803.17 | 1020 | 801.71 | 299 | 800.92 | 98 | 800.71 | 76 | 800.92 | 98 |
| 4 | 801.18 | 141 | 801.89 | 376 | 805.19 | 545 | 802.35 | 470 | ..... | 610 | 803.42 | 1160 | 802.58 | 710 | 804.31 | 1700 | 801.21 | 148 | 800.89 | 94 | 800.60 | 65 | 800.98 | 107 |
| 5 | 801.17 | 139 | 801.77 | 323 | 805.62 | 670 | 802.56 | 470 | ..... | 610 | 803.10 | 985 | 802.69 | 765 | 802.94 | 900 | 801.19 | 143 | 800.98 | 107 | 800.89 | 94 | 801.04 | 116 |
| 6 | 801.14 | 133 | 801.81 | 340 | 806.73 | 720 | 802.44 | 470 | ..... | 610 | 802.92 | 885 | 802.29 | 565 | 802.75 | 795 | 801.14 | 133 | 800.83 | 88 | 800.89 | 94 | 800.94 | 101 |
| 7 | 800.96 | 104 | 801.64 | 274 | 806.64 | 770 | 802.39 | 470 | ..... | 610 | 802.58 | 710 | 802.31 | 575 | 802.58 | 710 | 800.87 | 92 | 800.67 | 72 | 800.77 | 82 | 800.98 | 107 |
| 8 | 801.12 | 129 | 801.56 | 248 | 804.33 | 820 | 802.52 | 520 | ..... | 610 | 802.46 | 650 | 802.27 | 555 | 802.92 | 885 | 801.10 | 125 | 800.94 | 101 | 800.73 | 78 | 800.85 | 90 |
| 9 | 801.23 | 152 | 801.56 | 248 | 803.50 | 875 | 802.67 | 570 | ..... | 610 | 802.14 | 490 | 801.89 | 376 | 803.04 | 950 | 801.04 | 116 | 800.98 | 107 | 800.92 | 98 | 800.87 | 92 |
| 10 | 801.23 | 152 | 801.52 | 236 | 803.50 | 930 | 802.73 | 570 | ..... | 610 | 802.06 | 452 | 802.37 | 605 | 802.62 | 730 | 801.08 | 122 | 800.81 | 86 | 800.83 | 88 | 800.81 | 86 |
| 11 | 801.14 | 133 | 801.60 | 260 | 803.35 | 930 | 802.81 | 570 | ..... | 610 | 802.12 | 480 | 802.56 | 700 | 803.12 | 995 | 801.04 | 116 | 800.94 | 101 | 800.48 | 59 | 800.89 | 94 |
| 12 | 801.23 | 152 | 801.60 | 260 | 803.29 | 930 | 802.85 | 570 | ..... | 610 | 802.12 | 480 | 802.62 | 730 | 803.44 | 1170 | 801.08 | 122 | 801.04 | 116 | 800.92 | 98 | 800.94 | 101 |
| 13 | 801.19 | 143 | 801.67 | 285 | 803.79 | 1010 | 802.79 | 570 | ..... | 610 | 803.87 | 1420 | 802.12 | 480 | 803.27 | 1080 | 801.02 | 113 | 800.98 | 107 | 800.87 | 92 | 801.04 | 116 |
| 14 | 801.12 | 129 | 801.56 | 248 | 804.29 | 1095 | 802.81 | 520 | ..... | 610 | 806.14 | 3160 | 802.02 | 434 | 802.29 | 565 | 801.17 | 139 | 801.06 | 119 | 800.94 | 101 | 801.14 | 133 |
| 15 | 801.19 | 143 | 801.64 | 274 | 805.34 | 1320 | 802.92 | 570 | ..... | 610 | 805.50 | 2640 | 802.71 | 775 | 802.02 | 434 | 801.06 | 119 | 801.06 | 119 | 800.89 | 94 | 801.04 | 116 |
| 16 | 801.29 | 168 | 801.60 | 260 | 804.87 | 1150 | 802.71 | 520 | ..... | 610 | 803.58 | 1250 | 803.25 | 1070 | 802.12 | 480 | 801.00 | 110 | 800.98 | 107 | 800.54 | 62 | 800.56 | 63 |
| 17 | 801.27 | 162 | 801.56 | 248 | 803.79 | 1040 | 802.48 | 448 | ..... | 610 | 803.58 | 1250 | 803.37 | 1130 | 802.62 | 730 | 801.02 | 113 | 801.02 | 113 | 800.62 | 67 | 801.00 | 110 |
| 18 | 801.25 | 158 | 801.52 | 236 | 803.21 | 1050 | 802.14 | 335 | ..... | 610 | 803.60 | 1260 | 803.29 | 1090 | 802.12 | 480 | 801.08 | 122 | 800.96 | 104 | 800.44 | 57 | 801.27 | 162 |
| 19 | 801.52 | 236 | 802.50 | 230 | 803.21 | 1050 | 802.42 | 425 | ..... | 610 | 803.44 | 1170 | 303.10 | 985 | 802 54 | 690 | 801.14 | 133 | 801.02 | 113 | 800.73 | 78 | 801.37 | 191 |
| 20 | 802.89 | 870 | 802.52 | 185 | 803.31 | 1100 | 802.37 | 402 | ..... | 610 | 803.60 | 1260 | 803.27 | 1080 | 802.27 | 555 | 801.10 | 125 | 800.98 | 107 | 800.96 | 104 | 801.44 | 212 |
| 21 | 803.23 | 1060 | 802.48 | 185 | 803.73 | 1340 | 802.31 | 380 | ..... | 610 | 802.48 | 660 | 802.23 | 535 | 802.00 | 425 | 801.06 | 119 | 801.02 | 113 | 801.35 | 185 | 801.44 | 212 |
| 22 | 802.52 | 680 | 802.44 | 170 | 804.71 | 2010 | 802.58 | 425 | ..... | 610 | 802.75 | 795 | 802.37 | 605 | 801.77 | 323 | 801.08 | 122 | 800.92 | 98 | 800.85 | 90 | 801.31 | 173 |
| 23 | 802.25 | 545 | 802.48 | 170 | 805.19 | 2390 | 802.73 | 470 | ..... | 610 | 803.87 | 1420 | 802.87 | 860 | 801.71 | 299 | 800.92 | 98 | 800.94 | 101 | 800.89 | 94 | 801.29 | 167 |
| 24 | 801.89 | 376 | 802.48 | 170 | 806.25 | 3240 | 802.54 | 425 | ..... | 610 | 803.25 | 1070 | 803.25 | 1070 | 801.83 | 348 | 800.79 | 84 | 800.96 | 104 | 800.96 | 104 | 801.23 | 152 |
| 25 | 801.83 | 348 | 802.48 | 170 | 804.71 | 2010 | 802.23 | 380 | ..... | 610 | 802.58 | 710 | 803.04 | 950 | 802.17 | 505 | 800.94 | 101 | 801.00 | 110 | 800.96 | 104 | 801.17 | 139 |
| 26 | 801.85 | 857 | 802.58 | 170 | 803.71 | 1330 | 802.06 | 335 | ..... | 610 | 802.67 | 755 | 802.29 | 565 | 802.23 | 535 | 800.52 | 61 | 800.94 | 101 | 800.77 | 82 | 801.14 | 133 |
| 27 | 802.81 | 825 | 802.73 | 170 | 803.58 | 1250 | 802.08 | 358 | 805.12 | 2340 | 803.37 | 1130 | 802.02 | 434 | 802.00 | 425 | 800.87 | 92 | 800.85 | 90 | 800.89 | 94 | 801.14 | 133 |
| 28 | 804.06 | 1540 | 802.85 | 170 | 804.83 | 2100 | 802.17 | 380 | 805.12 | 2340 | 803.33 | 1110 | 802.04 | 443 | 801.81 | 340 | 800.92 | 98 | 801.06 | 119 | 800.94 | 101 | 801.12 | 129 |
| 29 | 803.37 | 1130 | 802.96 | 170 | 806.46 | 2450 | 802.25 | 402 | 807.08 | 3900 | 802.67 | 755 | 802.42 | 630 | 801.69 | 292 | 800.92 | 98 | 801.00 | 110 | 801.04 | 116 | 800.81 | 86 |
| 30 | 803.94 | 1460 | 803.04 | 170 | 803.92 | 1450 | ..... | .... | 808.33 | 4900 | 801.44 | 398 | 804.00 | 1500 | 801.69 | 292 | 800.81 | 86 | 800.85 | 88 | 801.25 | 158 | 801.08 | 122 |
| 31 | ..... | ..... | 803.19 | 170 | 804.54 | 1870 | ..... | .... | 807.21 | 4010 | ..... | ..... | 805.87 | 2940 | ..... | .... | 800.96 | 104 | 800.62 | 67 | ..... | ..... | 801.04 | 116 |

## Monthly Discharge of Nith River near Canning for 1915-6

Drainage Area 365 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square-mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 1,540 | 104 | 417 | 4.22 | .28 | 1.14 | 1.27 |
| December. " | 910 | 170 | 270 | 2.49 | .47 | .74 | .85 |
| January.. (1916) | 3,240 | 230 | 1,239 | 8.88 | .63 | 3.39 | 3.91 |
| February ..... | 2,480 | 335 | 571 | 6.79 | .92 | 1.56 | 1.68 |
| March..... | 4,900 | 610 | 1,076 | 13.42 | 1.67 | 2.95 | 3.40 |
| April ..... | 3,160 | 398 | 1,148 | 8.66 | 1.09 | 3.15 | 3.51 |
| May..... | 2,940 | 376 | 798 | 8.05 | 1.03 | 2.19 | 2.52 |
| June ..... | 1,700 | 292 | 683 | 4.66 | .80 | 1.87 | 2.09 |
| July..... | 307 | 61 | 131 | .84 | .17 | .36 | .42 |
| August ..... | 116 | 67 | 103 | .32 | .18 | .28 | .32 |
| September ..... | 158 | 57 | 92 | .43 | .16 | .25 | .28 |
| October ..... | 212 | 63 | 124 | .58 | .17 | .34 | .39 |
| The year..... | 4,900 | 57 | 554 | 13.42 | .16 | 1.52 | 20.69 |

## Speed River near Guelph

Location—At Caraher's highway bridge above the junction of the Speed and Eramosa Rivers and 3¾ miles from the City of Guelph, Township of Guelph, County of Wellington.

Records Available—October 27, 1913, to October 31, 1916.

Drainage Area—77 square miles.

Gauge—Vertical steel staff 0 to 12 feet, one on each abutment of bridge. Elevation of zero on each gauge is 1126.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 250 feet above and 500 feet below the gauging section. During flood stages the control and banks are liable to shift, as the bed is composed of loose gravel. One channel exists at all stages.

Discharge Measurements—Made from the bridge and from a permanent low water section 300 feet down stream.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter season, and measurements are taken during that period to determine the winter flow.

Regulation—A small mill is operated one mile and a half upstream. Slight fluctuations are caused only in the dry season, and are hardly noticeable at the gauge.

Accuracy—The open channel rating curve is fairly well defined for flows up to 500 second feet, the discharge for low flows being considered good.

Observer—Hugh Caraher, Guelph.

### Discharge Measurements of Speed River near Guelph in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 9.... | Roberts, F..... | 45 | 25 | .84 | 1,128.14 | 21 | ..... .... |
| 1916 | | | | | | | |
| April 5.... | Cunnington, G .. | 70 | 162 | 1.70 | 1,129.14 | 276 | ... ... .... |
| " 5.... | " .. | 70 | 162 | 1.63 | 1,129.14 | 264 | ... ... .... |
| " 5.... | " .. | 70 | 162 | 1.63 | 1,129.17 | 265 | ... ... .... |
| May 10.... | Roberts, E..... | 56 | 57 | 1.44 | 1,128.58 | 82 | ... ... .... |
| Oct. 6.... | Yeates, W..... | 49 | 13 | .26 | 1,127.98 | 3 | ... ... .... |

# Daily Gauge Height and Discharge of Speed River near Guelph for 1915-6

Drainage Area, 77 Square Miles.

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 1128.33 | 47 | 1128.50 | 74 | 1128.75 | 43 | 1131.37 | 635 | 1128.83 | 50 | 1130.29 | 710 | 1128.64 | 103 | 1128.87 | 163 | 1128.25 | 37 | 1127.83 | 4 | 1127.83 | 4 | 1127.92 | 8 |
| 2 | 1128.17 | 28 | 1128.50 | 43 | 1129.04 | 74 | 1131.12 | 515 | 1128.89 | 66 | 1129.67 | 463 | 1128.75 | 130 | 1128.96 | 191 | 1128.17 | 28 | 1127.83 | 4 | 1127.92 | 8 | 1127.92 | 8 |
| 3 | 1128.08 | 19 | 1128.46 | 31 | 1129.12 | 84 | 1130.56 | 395 | 1128.94 | 74 | 1128.87 | 163 | 1129.00 | 204 | 1130.08 | 623 | 1128.17 | 28 | 1127.75 | 2 | 1127.92 | 8 | 1127.92 | 8 |
| 4 | 1128.08 | 19 | 1128.46 | 26 | 1129.17 | 94 | 1130.21 | 257 | 1129.00 | 84 | 1128.83 | 152 | 1129.12 | 246 | 1129.14 | 254 | 1128.17 | 28 | 1127.67 | 2 | 1127.92 | 8 | 1127.92 | 8 |
| 5 | 1128.17 | 28 | 1128.42 | 26 | 1129.29 | 117 | 1129.62 | 204 | 1128.87 | 74 | 1128.96 | 191 | 1128.85 | 158 | 1129.04 | 218 | 1128.17 | 28 | 1127.67 | 2 | 1127.92 | 8 | 1127.92 | 8 |
| 6 | 1128.17 | 28 | 1128.42 | 26 | 1129.75 | 239 | 1129.58 | 143 | 1128.83 | 66 | 1128.96 | 191 | 1128.71 | 120 | 1128.87 | 163 | 1128.08 | 19 | 1127.67 | 2 | 1127.92 | 8 | 1127.92 | 8 |
| 7 | 1128.17 | 28 | 1128.39 | 21 | 1129.75 | 239 | 1129.21 | 84 | 1128.98 | 84 | 1128.69 | 115 | 1128.58 | 90 | 1128.69 | 115 | 1128.08 | 19 | 1127.58 | 1 | 1127.92 | 8 | 1127.92 | 8 |
| 8 | 1128.21 | 32 | 1128.39 | 21 | 1129.75 | 239 | 1129.29 | 117 | 1129.00 | 84 | 1128.71 | 120 | 1128.62 | 99 | 1128.67 | 110 | 1128.08 | 19 | 1127.58 | 1 | 1127.83 | 4 | 1127.92 | 8 |
| 9 | 1128.17 | 28 | 1128.54 | 31 | 1129.54 | 188 | 1128.96 | 74 | 1129.00 | 84 | 1128.75 | 130 | 1128.60 | 94 | 1128.67 | 110 | 1128.08 | 19 | 1127.71 | 2 | 1127.83 | 4 | 1127.92 | 8 |
| 10 | 1128.14 | 25 | 1122.54 | 31 | 1129.42 | 157 | 1129.17 | 106 | 1129.00 | 84 | 1128.67 | 110 | 1128.60 | 94 | 1128.54 | 82 | 1128.17 | 28 | 1127.83 | 4 | 1127.83 | 4 | 1127.92 | 8 |
| 11 | 1128.17 | 28 | 1128.50 | 26 | 1129.37 | 117 | 1128.96 | 74 | 1129.08 | 94 | 1128.67 | 110 | 1128.96 | 191 | 1128.62 | 99 | 1128.12 | 23 | 1127.92 | 8 | 1127.83 | 4 | 1127.92 | 8 |
| 12 | 1128.21 | 32 | 1128.56 | 31 | 1129.46 | 172 | 1128.92 | 66 | 1129.00 | 84 | 1128.98 | 198 | 1128.67 | 110 | 1128.62 | 99 | 1128.08 | 19 | 1127.92 | 8 | 1127.83 | 4 | 1127.92 | 8 |
| 13 | 1128.25 | 37 | 1128.56 | 31 | 1130.06 | 276 | 1128.75 | 43 | 1129.08 | 94 | 1129.58 | 427 | 1128.60 | 94 | 1128.58 | 90 | 1128.08 | 19 | 1127.92 | 8 | 1127.83 | 4 | 1127.96 | 11 |
| 14 | 1128.25 | 37 | 1128.58 | 31 | 1129.83 | 204 | 1128.87 | 57 | 1129.04 | 84 | 1130.33 | 725 | 1128.54 | 82 | 1128.50 | 74 | 1128.08 | 19 | 1127.92 | 8 | 1127.83 | 4 | 1128.08 | 19 |
| 15 | 1128.21 | 32 | 1128.54 | 26 | 1129.79 | 172 | 1128.83 | 57 | 1129.08 | 94 | 1129.71 | 479 | 1128.83 | 152 | 1128.46 | 67 | 1128.00 | 13 | 1127.92 | 8 | 1127.83 | 4 | 1128.08 | 19 |
| 16 | 1128.17 | 28 | 1128.58 | 31 | 1129.64 | 143 | 1128.83 | 57 | 1129.08 | 94 | 1129.00 | 204 | 1128.83 | 152 | 1128.46 | 67 | 1128.08 | 19 | 1127.92 | 8 | 1127.83 | 4 | 1128.08 | 19 |
| 17 | 1128.25 | 37 | 1128.54 | 26 | 1129.54 | 117 | 1128.83 | 57 | 1129.00 | 74 | 1129.77 | 505 | 1128.85 | 158 | 1128.52 | 78 | 1128.12 | 23 | 1127.92 | 8 | 1127.83 | 4 | 1128.08 | 19 |
| 18 | 1128.21 | 32 | 1128.62 | 31 | 1129.46 | 94 | 1128.79 | 50 | 1129.14 | 94 | 1129.30 | 315 | 1128.77 | 135 | 1128.54 | 82 | 1128.04 | 16 | 1127.92 | 8 | 1127.83 | 4 | 1128.00 | 13 |
| 19 | 1128.42 | 60 | 1128.67 | 37 | 1129.42 | 84 | 1128.79 | 50 | 1128.92 | 74 | 1128.96 | 191 | 1128.58 | 90 | 1128.54 | 82 | 1128.00 | 13 | 1127.92 | 8 | 1127.83 | 4 | 1128.12 | 23 |
| 20 | 1129.00 | 204 | 1128.67 | 37 | 1129.35 | 74 | 1128.79 | 50 | 1129.08 | 94 | 1128.79 | 140 | 1128.58 | 90 | 1128.50 | 74 | 1128.00 | 13 | 1127.92 | 8 | 1127.83 | 4 | 1128.46 | 67 |
| 21 | 1128.75 | 130 | 1128.62 | 31 | 1129.44 | 117 | 1128.79 | 50 | 1129.08 | 94 | 1129.54 | 411 | 1128.52 | 78 | 1128.44 | 64 | 1128.04 | 16 | 1127.92 | 8 | 1127.83 | 4 | 1128.42 | 60 |
| 22 | 1128.50 | 74 | 1128.67 | 43 | 1132.12 | 315 | 1128.67 | 37 | 1129.00 | 84 | 1130.29 | 710 | 1128.62 | 99 | 1128.42 | 60 | 1128.04 | 16 | 1127.92 | 8 | 1127.83 | 4 | 1128.35 | 50 |
| 23 | 1128.52 | 78 | 1128.79 | 57 | 1132.33 | 375 | 1128.73 | 50 | 1128.96 | 74 | 1129.75 | 495 | 1129.08 | 232 | 1128.12 | 23 | 1128.00 | 13 | 1128.06 | 8 | 1127.83 | 4 | 1128.33 | 47 |
| 24 | 1128.48 | 71 | 1128.54 | 31 | 1131.67 | 204 | 1128.75 | 50 | 1128.96 | 74 | 1129.17 | 265 | 1128.85 | 158 | 1128.33 | 47 | 1128.00 | 13 | 1127.96 | 8 | 1127.83 | 4 | 1128.37 | 52 |
| 25 | 1128.46 | 67 | 1128.42 | 21 | 1131.19 | 143 | 1128.87 | 66 | 1128.96 | 94 | 1129.00 | 204 | 1128.60 | 94 | 1128.83 | 152 | 1128.00 | 13 | 1127.92 | 8 | 1127.83 | 4 | 1128.37 | 52 |
| 26 | 1128.71 | 120 | 1128.54 | 31 | 1131.00 | 130 | 1128.87 | 66 | 1129.21 | 204 | 1128.96 | 191 | 1128.46 | 67 | 1128.58 | 90 | 1128.00 | 13 | 1127.92 | 8 | 1127.83 | 4 | 1128.08 | 19 |
| 27 | 1128.79 | 140 | 1128.92 | 74 | 1131.33 | 204 | 1128.83 | 55 | 1129.62 | 443 | 1129.62 | 443 | 1128.58 | 90 | 1128.44 | 64 | 1127.87 | 6 | 1127.92 | 8 | 1127.83 | 4 | 1128.08 | 19 |
| 28 | 1129.00 | 204 | 1128.96 | 84 | 1132.17 | 475 | 1128.92 | 66 | 1131.33 | 1130 | 1129.02 | 211 | 1128.67 | 110 | 1128.33 | 47 | 1127.87 | 6 | 1127.92 | 8 | 1127.83 | 4 | 1128.08 | 19 |
| 29 | 1128.83 | 152 | 1128.92 | 74 | 1131.39 | 204 | 1128.87 | 57 | 1133.08 | 1830 | 1128.83 | 152 | 1128.50 | 74 | 1128.29 | 42 | 1127.87 | 6 | 1127.92 | 8 | 1127.92 | 8 | 1128.04 | 16 |
| 30 | 1128.73 | 125 | 1128.87 | 66 | 1130.37 | 74 | ..... | .... | 1133.31 | 1920 | 1128.69 | 115 | 1129.87 | 545 | 1128.29 | 42 | 1127.83 | 4 | 1127.92 | 8 | 1127.92 | 8 | 1128.00 | 13 |
| 31 | ..... | .... | 1128.87 | 50 | 1132.32 | 915 | ..... | .... | 1131.52 | 1200 | ..... | .... | 1129.35 | 335 | ..... | .... | 1127.83 | 4 | 1127.92 | 8 | ..... | .... | 1128.00 | 13 |

## Monthly Discharge of Speed River near Guelph for 1915-6

Drainage Area, 77 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 204 | 19 | 66 | 2.65 | .25 | .86 | .96 |
| December " | 84 | 21 | 39 | 1.09 | .27 | .51 | .59 |
| January (1916) | 915 | 43 | 196 | 11.86 | .56 | 2.55 | 2.94 |
| February | 635 | 37 | 124 | 8.25 | .48 | 1.61 | 1.74 |
| March | 1,920 | 50 | 283 | 24.94 | .65 | 3.68 | 4.24 |
| April | 725 | 110 | 295 | 9.42 | 1.43 | 3.83 | 4.27 |
| May | 545 | 74 | 145 | 7.08 | .96 | 1.88 | 2.17 |
| June | 625 | 23 | 116 | 8.12 | .30 | 1.51 | 1.68 |
| July | 37 | 4 | 17 | .48 | .05 | .22 | .25 |
| August | 18 | 1 | 7 | .23 | .01 | .09 | .10 |
| September | 8 | 4 | 5 | .10 | .05 | .06 | .07 |
| October | 67 | 8 | 21 | .87 | .10 | .27 | .31 |
| The year | 1,920 | 1 | 109 | 2,494 | .01 | 1.42 | 19.33 |

## Speed River at Hespeler

**Location**—At a point 100 feet below the jail, which adjoins the power house, in the Town of Hespeler, Township of Waterloo, County of Waterloo.

**Records Available**—Discharge measurements from July 10, 1913, to October 31, 1916. Daily gauge heights from October 23, 1913, to October 31, 1916.

**Drainage Area**—250 square miles.

**Gauge**—Vertical steel staff 0 to 12 feet on jail wall adjoining power house. The elevation of zero on the gauge is 935.00.

**Channel and Control**—Straight for about 300 feet above and below the gauging section. Loose gravel forms the bed of this stream, which is decidedly shifting. The banks are low, and overflow when the water raises 2 feet above normal. Weeds at the control and in channel have a decided effect at the gauging section.

**Discharge Measurements**—Made from a permanent wading section 100 feet below the gauge during the low stages, and the dam 400 feet above will be used as a weir during the flood season.

**Winter Flow**—The relation of gauge height to discharge is somewhat affected by the presence of ice for a short period during the winter season.

**Regulation**—A dam 400 ft. above this section causes serious fluctuations in the river stage during the low water period.

**Accuracy**—Owing to the shifting bed and the presence of weeds at and below section, greatly interfering with the metering of stream, these records can only be classed as fair.

**Observer**—W. D. Scott, Hespeler.

### Discharge Measurements of Speed River at Hespeler in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 16.... | Cunnington, G. | 90 | 99 | 1.92 | 936.43 | 152 | ..... |
| Dec. 23.... | Yeates, W .... | 86 | 80 | 1.04 | 936.21 | 83 (a) | ..... |
| 1916 | | | | | | | |
| Jan. 8.... | Roberts. E.... | 102 | 182 | 2.40 | 937.31 | 436 | ..... |
| " 21.... | Yeates, W .... | 97 | 150 | 1.58 | 936.92 | 238 (b) | ..... |
| Feb. 17.... | " .... | 93 | 131 | 1.38 | 936.68 | 181 (b) | ..... |
| Mar. 1.... | Cunnington, G. | 94 | 105 | 1.27 | 936.42 | 132 (c) | ..... |
| May 10.... | Roberts. E.... | 100 | 166 | 2.27 | 937.08 | 378 | ..... |

(a) Section has been badly scoured; large quantities of gravel have been taken from bed of stream.

(b) Ice-covered below section.

(c) Section partly ice-covered.

## Daily Gauge Height and Discharge of Speed River at Hespeler for 1915-6

**Drainage Area, 250 Square Miles**

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 936.48 | 150 | 937.05 | 330 | 936.48 | 150 | 939.98 | 2190 | 936.62 | 186 | 939.83 | 2080 | 937.23 | 405 | 938.42 | 1090 | 936.64 | 191 | 936.31 | 109 | 936.23 | 94 | 936.00 | 57 |
| 2 | 936.39 | 128 | 937.12 | 358 | 936.69 | 205 | 938.39 | 1070 | 936.50 | 155 | 939.23 | 1660 | 937.25 | 415 | 937.73 | 670 | 936.60 | 180 | 936.31 | 109 | 936.19 | 86 | 936.23 | 94 |
| 3 | 936.42 | 135 | 936.98 | 305 | 936.81 | 244 | 937.64 | 615 | 936.52 | 160 | 938.69 | 1280 | 937.21 | 395 | 938.96 | 1470 | 936.60 | 180 | 936.35 | 118 | 936.04 | 63 | 936.27 | 101 |
| 4 | 936.42 | 135 | 936.77 | 230 | 936.83 | 250 | 937.19 | 386 | 936.52 | 160 | 938.37 | 1060 | 937.12 | 358 | 938.73 | 1310 | 936.52 | 160 | 936.33 | 114 | 935.98 | 55 | 936.25 | 98 |
| 5 | 936.48 | 150 | 936.58 | 175 | 937.06 | 334 | 937.04 | 326 | 936.56 | 170 | 938.04 | 855 | 937.10 | 350 | 938.27 | 990 | 936.52 | 160 | 936.21 | 90 | 936.23 | 94 | 936.25 | 98 |
| 6 | 936.44 | 140 | 936.50 | 155 | 937.33 | 455 | 937.00 | 275 | 936.54 | 165 | 937.62 | 600 | 937.10 | 350 | 937.79 | 705 | 936.48 | 150 | 935.96 | 52 | 936.27 | 101 | 936.23 | 94 |
| 7 | 936.35 | 118 | 936.48 | 150 | 937.52 | 550 | 936.79 | 202 | 936.64 | 191 | 937.39 | 485 | 937.23 | 405 | 937.62 | 600 | 936.46 | 145 | 935.89 | 44 | 936.27 | 101 | 936.23 | 94 |
| 8 | 935.42 | 135 | 936.50 | 155 | 937.42 | 500 | 936.71 | 186 | 936.60 | 180 | 937.23 | 405 | 937.10 | 350 | 937.54 | 560 | 936.42 | 135 | 936.34 | 116 | 936.21 | 90 | 936.08 | 69 |
| 9 | 936.46 | 145 | 936.39 | 128 | 937.19 | 386 | 936.73 | 186 | 936.50 | 155 | 937.17 | 378 | 937.12 | 358 | 937.44 | 510 | 936.50 | 155 | 936.35 | 118 | 936.21 | 90 | 936.25 | 98 |
| 10 | 936.39 | 128 | 936.37 | 123 | 937.23 | 405 | 936.79 | 208 | 936.48 | 150 | 937.06 | 334 | 937.12 | 358 | 937.33 | 455 | 936.52 | 160 | 936.29 | 105 | 936.04 | 63 | 936.27 | 101 |
| 11 | 936.29 | 105 | 936.37 | 123 | 937.10 | 350 | 936.73 | 194 | 936.48 | 150 | 937.37 | 475 | 937.14 | 364 | 937.44 | 510 | 936.42 | 135 | 936.31 | 109 | 936.27 | 101 | 936.27 | 101 |
| 12 | 936.39 | 128 | 936.31 | 109 | 936.96 | 296 | 936.87 | 240 | 936.48 | 150 | 937.73 | 670 | 937.12 | 358 | 937.29 | 435 | 936.39 | 128 | 936.31 | 109 | 936.30 | 107 | 936.25 | 98 |
| 13 | 936.33 | 114 | 936.37 | 123 | 937.56 | 570 | 937.08 | 310 | 936.50 | 155 | 938.42 | 1090 | 937.12 | 358 | 937.17 | 378 | 936.37 | 123 | 936.02 | 60 | 936.27 | 101 | 936.25 | 98 |
| 14 | 986.35 | 118 | 936.33 | 114 | 937.21 | 395 | 937.06 | 310 | 936.48 | 150 | 938.58 | 1210 | 937.14 | 364 | 937.12 | 358 | 936.35 | 118 | 936.31 | 109 | 936.25 | 98 | 936.27 | 101 |
| 15 | 935.39 | 128 | 936.35 | 118 | 937.08 | 342 | 937.00 | 275 | 936.46 | 145 | 938.96 | 1470 | 937.12 | 358 | 937.17 | 378 | 936.31 | 109 | 936.33 | 114 | 936.25 | 98 | 936.10 | 72 |
| 16 | 936.46 | 145 | 936.39 | 128 | 937.19 | 310 | 936.96 | 258 | 936.39 | 128 | 938.37 | 1060 | 937.14 | 364 | 937.06 | 334 | 936.35 | 118 | 936.23 | 94 | 936.29 | 105 | 936.23 | 94 |
| 17 | 936.42 | 135 | 936.46 | 145 | 937.60 | 292 | 936.75 | 194 | 936.62 | 186 | 938.35 | 1040 | 937.29 | 435 | 937.14 | 364 | 936.30 | 128 | 936.27 | 101 | 935.96 | 52 | 936.23 | 94 |
| 18 | 936.35 | 118 | 936.52 | 160 | 937.52 | 257 | 936.73 | 194 | 936.64 | 191 | 938.39 | 1070 | 937.44 | 510 | 937.14 | 364 | 936.37 | 123 | 936.23 | 94 | 936.25 | 98 | 936.25 | 98 |
| 19 | 936.64 | 191 | 936.48 | 150 | 937.44 | 258 | 936.71 | 194 | 936.64 | 191 | 938.37 | 1060 | 937.33 | 455 | 937.10 | 350 | 936.33 | 114 | 936.21 | 90 | 936.25 | 98 | 936.25 | 98 |
| 20 | 937.21 | 395 | 936.48 | 150 | 937.02 | 240 | 936.71 | 194 | 936.44 | 140 | 937.54 | 560 | 937.23 | 405 | 937.02 | 318 | 936.31 | 109 | 936.00 | 57 | 936.29 | 105 | 936.25 | 98 |
| 21 | 937.19 | 386 | 936.46 | 145 | 936.92 | 240 | 936.96 | 296 | 936.50 | 155 | 938.06 | 865 | 937.23 | 405 | 937.48 | 530 | 936.23 | 94 | 936.29 | 105 | 936.29 | 105 | 936.29 | 105 |
| 22 | 937.10 | 350 | 936.31 | 109 | 937.06 | 334 | 936.79 | 237 | 936.44 | 140 | 938.35 | 1040 | 937.17 | 378 | 936.92 | 282 | 936.21 | 90 | 936.31 | 109 | 936.21 | 90 | 936.04 | 63 |
| 23 | 936.87 | 265 | 946.37 | 123 | 938.14 | 915 | 936.58 | 175 | 936.37 | 123 | 938.17 | 930 | 937.12 | 358 | 937.04 | 326 | 936.29 | 105 | 936.27 | 101 | 936.21 | 90 | 936.27 | 101 |
| 24 | 936.75 | 224 | 936.39 | 128 | 937.85 | 740 | 936.50 | 155 | 936.30 | 107 | 938.67 | 1270 | 937.08 | 342 | 937.19 | 386 | 936.31 | 109 | 936.23 | 94 | 935.83 | 39 | 936.27 | 101 |
| 25 | 936.75 | 224 | 936.37 | 123 | 937.77 | 690 | 936.50 | 155 | 936.31 | 109 | 938.35 | 1040 | 937.08 | 342 | 937.29 | 435 | 936.25 | 98 | 936.23 | 94 | 936.19 | 86 | 936.27 | 101 |
| 26 | 936.81 | 224 | 936.27 | 101 | 937.71 | 655 | 936.50 | 155 | 936.71 | 211 | 937.87 | 750 | 937.06 | 334 | 937.27 | 425 | 936.19 | 86 | 936.20 | 88 | 936.21 | 90 | 936.23 | 94 |
| 27 | 937.00 | 310 | 936.35 | 118 | 937.98 | 820 | 936.64 | 191 | 937.08 | 342 | 937.83 | 730 | 937.04 | 326 | 936.96 | 296 | 936.06 | 66 | 936.00 | 88 | 936.23 | 94 | 936.27 | 101 |
| 28 | 937.33 | 455 | 936.37 | 123 | 938.71 | 1300 | 936.62 | 186 | 938.37 | 1060 | 937.71 | 655 | 937.12 | 358 | 936.81 | 244 | 936.00 | 57 | 936.27 | 101 | 936.23 | 94 | 936.27 | 101 |
| 29 | 937.25 | 415 | 936.31 | 109 | 938.19 | 945 | 936.67 | 200 | 939.75 | 2020 | 937.58 | 580 | 937.17 | 378 | 936.73 | 218 | 935.89 | 44 | 936.27 | 101 | 936.25 | 98 | 936.14 | 78 |
| 30 | 937.17 | 278 | 936.42 | 135 | 937.96 | 805 | ..... | ..... | 940.50 | 2550 | 937.37 | 475 | 938.37 | 1060 | 936.69 | 205 | 936.02 | 60 | 936.26 | 99 | 936.25 | 98 | 936.28 | 104 |
| 31 | ..... | ..... | 936.42 | 135 | 938.67 | 1270 | ..... | ..... | 940.60 | 2620 | ..... | ..... | 938.69 | 1280 | ..... | ..... | 936.31 | 109 | 926.25 | 98 | ..... | ..... | 936.29 | 105 |

## Monthly Discharge of Speed River at Hespeler for 1915-6

Drainage Area, 250 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 455 | 105 | 203 | 1.82 | .42 | .81 | .90 |
| December " | 358 | 101 | 154 | 1.43 | .40 | .62 | .71 |
| January (1916) | 1,300 | 150 | 500 | 5.20 | .60 | 2.00 | 2.31 |
| February | 2,190 | 155 | 336 | 8.76 | .62 | 1.34 | 1.45 |
| March | 2,620 | 107 | 410 | 10.48 | .43 | 1.64 | 1.89 |
| April | 2,080 | 334 | 906 | 8.32 | 1.34 | 3.62 | 4.04 |
| May | 1,280 | 326 | 428 | 5.12 | 1.30 | 1.71 | 1.97 |
| June | 1,470 | 205 | 517 | 5.88 | .82 | 2.07 | 2.31 |
| July | 191 | 44 | 121 | .76 | .18 | .48 | .55 |
| August | 118 | 44 | 96 | .47 | 18 | .38 | .44 |
| September | 107 | 39 | 89 | .43 | .16 | .36 | .40 |
| October | 105 | 57 | 94 | .42 | .23 | .38 | .44 |
| The year | 2,620 | 39 | 320 | 10.48 | .16 | 1.28 | 17.42 |

## Whiteman's Creek near Burford

Location—At the first concrete bridge above the confluence of the creek with the Grand River, lot 14, concession 3, Township of Brantford, County of Brant.

Records Available—June 30, 1913, to August 31, 1916.

Drainage Area—154 square miles.

Gauge—Vertical steel staff 0 to 12 feet on the left abutment of bridge. Elevation of zero on the gauge is 690.00, which has remained unchanged since established.

Channel and Control—All the water passes between the two abutments. The river bed directly under the bridge is solid concrete. During flood conditions on the Grand River this section may be affected by backwater.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Seriously affected by ice.

Regulation—A mill located 2 miles upstream known as App's Mill causes serious daily fluctuations in the river stage at this section.

Accuracy—The fluctuations caused by chopping mill make it difficult to obtain the representative mean daily gauge height. The rating curve is fairly well defined up to 700 second feet.

Observer——J. R. Davis, Brantford.

Gauge readings discontinued after August 31, 1916.

### Discharge Measurements of Whiteman's Creek near Burford in 1915-6

| Date | Hydrographer | Width in Feet | Area of Section in Sq. Feet | Mean Velocity in Feet per Sec. | Gauge Height in Feet | Discharge in Sec-Feet | Discharge in Second-feet per Square Mile |
|---|---|---|---|---|---|---|---|
| 1915 | | | | | | | |
| Nov. 4.... | Cunnington, G .. | 61 | 35 | 1.70 | 690.83 | 52 | ..... |
| 1916 | | | | | | | |
| May 2.... | Yeates, W..... | 60 | 69 | 2.49 | 691.33 | 171 | ..... |

## Daily Gauge Height and Discharge of Whiteman's Creek near Burford for 1915-6

Drainage Area, 154 Square Miles

| Day | November | | December | | January | | February | | March | | April | | May | | June | | July | | August | | September | | October | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge | Gauge Ht. | Discharge |
| | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* | *Feet* | *Sec-ft.* |
| 1 | 690.75 | 50 | 691.67 | 251 | 691.52 | 88 | 693.19 | 860 | 692.08 | 190 | 693.12 | 825 | 691.21 | 130 | 692.73 | 640 | 690.89 | 70 | 690.46 | 16 | 690.39 | 9 | ..... | ..... |
| 2 | 690.71 | 44 | 691.50 | 203 | 691.48 | 107 | 692.69 | 620 | 691.83 | 151 | 692.92 | 725 | 691.17 | 122 | 692.19 | 417 | 690.85 | 64 | 690.58 | 29 | 690.58 | 29 | ..... | ..... |
| 3 | 690.69 | 42 | 691.42 | 182 | 691.69 | 164 | 692.35 | 478 | 691.71 | 140 | 692.50 | 540 | 691.35 | 164 | 691.94 | 334 | 690.87 | 66 | 690.62 | 33 | 690.54 | 24 | ..... | ..... |
| 4 | 690.73 | 47 | 691.33 | 158 | 691.92 | 203 | 692.23 | 433 | 691.96 | 190 | 692.25 | 439 | 691.58 | 225 | 691.87 | 312 | 690.75 | 50 | 690.54 | 24 | 690.46 | 16 | ..... | ..... |
| 5 | 690.67 | 39 | 691.23 | 135 | 692.50 | 355 | 691.71 | 263 | 692.00 | 195 | 692.02 | 360 | 691.25 | 140 | 691.85 | 306 | 690.73 | 47 | 690.54 | 24 | 690.42 | 12 | ..... | ..... |
| 6 | 690.87 | 66 | 691.10 | 107 | 693.44 | 538 | 691.37 | 169 | 691.87 | 176 | 691.87 | 312 | 691.23 | 135 | 691.67 | 251 | 690.62 | 33 | 690.50 | 20 | 690.29 | 4 | ..... | ..... |
| 7 | 690.67 | 39 | 691.27 | 144 | 692.85 | 458 | 691.69 | 203 | 692.08 | 203 | 691.79 | 287 | 691.29 | 149 | 691.60 | 231 | 690.60 | 31 | 690.52 | 22 | 690.50 | 20 | ..... | ..... |
| 8 | 690.60 | 31 | 691.19 | 126 | 692.64 | 421 | 693.14 | 246 | 691.98 | 176 | 691.54 | 214 | 691.29 | 149 | 692.02 | 360 | 690.67 | 39 | 690.58 | 29 | 690.58 | 29 | ..... | ..... |
| 9 | 690.67 | 39 | 691.12 | 111 | 692.37 | 386 | 693.50 | 290 | 691.85 | 151 | 691.52 | 209 | 691.42 | 181 | 692.25 | 439 | 690.77 | 52 | 690.56 | 27 | 690.58 | 29 | ..... | ..... |
| 10 | 690.75 | 50 | 691.33 | 98 | 692.25 | 353 | 693.31 | 266 | 691.81 | 157 | 691.50 | 203 | 691.50 | 203 | 692.17 | 411 | 690.73 | 47 | 690.58 | 29 | 690.50 | 20 | ..... | ..... |
| 11 | 690.75 | 50 | 691.19 | 98 | 692.12 | 321 | 693.10 | 246 | 691.92 | 176 | 691.48 | 198 | 691.94 | 334 | 692.83 | 685 | 690.75 | 50 | 690.56 | 27 | 690.42 | 12 | ..... | ..... |
| 12 | 690.75 | 50 | 691.39 | 118 | 692.23 | 353 | 693.21 | 260 | 691.96 | 176 | 691.58 | 225 | 691.89 | 319 | 692.79 | 665 | 690.69 | 42 | 690.50 | 20 | 690.37 | 8 | ..... | ..... |
| 13 | 690.81 | 58 | 691.37 | 107 | 692.50 | 353 | 693.04 | 231 | 691.83 | 151 | 691.83 | 299 | 691.62 | 237 | 692.54 | 555 | 690.67 | 39 | 690.58 | 29 | 690.39 | 9 | ..... | ..... |
| 14 | 690.77 | 52 | 691.14 | 80 | 692.50 | 353 | 692.92 | 203 | 691.25 | 140 | 692.33 | 470 | 691.46 | 192 | 692.08 | 380 | 690.60 | 31 | 690.54 | 24 | 690.42 | 12 | ..... | ..... |
| 15 | 690.71 | 44 | 691.06 | 71 | 692.29 | 353 | 693.00 | 231 | 691.08 | 103 | 692.79 | 665 | 691.85 | 306 | 691.71 | 263 | 690.62 | 33 | 690.39 | 9 | 690.52 | 22 | ..... | ..... |
| 16 | 690.81 | 58 | 691.02 | 64 | 692.29 | 306 | 692.75 | 203 | 691.83 | 156 | 692.87 | 705 | 692.69 | 620 | 691.58 | 225 | 690.67 | 39 | 690.39 | 9 | 690.50 | 20 | ..... | ..... |
| 17 | 690.77 | 52 | 691.12 | 80 | 692.06 | 321 | 692.69 | 203 | 691.54 | 140 | 693.21 | 870 | 692.48 | 530 | 691.54 | 214 | 690.58 | 29 | 690.62 | 33 | ..... | .... | ..... | ..... |
| 18 | 690.87 | 66 | 691.10 | 71 | 694.75 | 518 | 692.69 | 203 | 691.46 | 128 | 692.54 | 556 | 692.33 | 470 | 691.46 | 192 | 690.58 | 29 | 690.37 | 8 | ..... | .... | ..... | ..... |
| 19 | 691.17 | 122 | 691.12 | 80 | 696.12 | 1025 | 692.27 | 176 | 691.62 | 133 | 692.08 | 379 | 691.94 | 334 | 691.50 | 203 | 690.58 | 29 | 690.54 | 24 | ..... | .... | ..... | ..... |
| 20 | 691.94 | 334 | 691.31 | 88 | 696.08 | 970 | 692.60 | 203 | 691.46 | 118 | 691.92 | 327 | 691.54 | 214 | 691.42 | 181 | 690.64 | 36 | 690.50 | 20 | ..... | .... | ..... | ..... |
| 21 | 691.83 | 299 | 691.27 | 80 | 696.23 | 915 | 692.58 | 203 | 691.04 | 96 | 692.00 | 353 | 691.56 | 220 | 691.35 | 158 | 690.67 | 39 | 690.58 | 29 | ..... | .... | ..... | ..... |
| 22 | 691.75 | 275 | 691.29 | 80 | 695.12 | 840 | 692.50 | 203 | 691.04 | 96 | 691.96 | 340 | 691.58 | 225 | 691.31 | 153 | 690.54 | 24 | 690.67 | 39 | ..... | .... | ..... | ..... |
| 23 | 691.56 | 220 | 691.21 | 71 | 694.27 | 740 | 692.12 | 176 | 691.46 | 192 | 692.04 | 366 | 692.25 | 140 | 691.10 | 107 | 690.58 | 29 | 690.62 | 33 | ..... | .... | ..... | ..... |
| 24 | 691.44 | 187 | 691.17 | 71 | 693.04 | 497 | 692.31 | 217 | 691.21 | 130 | 691.67 | 251 | 692.25 | 140 | 691.29 | 149 | 690.54 | 24 | 690.58 | 29 | ..... | .... | ..... | ..... |
| 25 | 691.35 | 164 | 691.12 | 64 | 692.31 | 462 | 692.27 | 190 | 691.00 | 88 | 691.44 | 187 | 692.04 | 366 | 691.37 | 168 | 690.46 | 16 | 690.54 | 24 | ..... | .... | ..... | ..... |
| 26 | 691.31 | 154 | 691.21 | 71 | 692.33 | 470 | 692.14 | 176 | 691.25 | 140 | 691.50 | 203 | 691.69 | 257 | 691.25 | 140 | 690.46 | 16 | 690.56 | 27 | ..... | .... | ..... | ..... |
| 27 | 691.33 | 158 | 691.10 | 64 | 692.44 | 515 | 692.04 | 164 | 692.25 | 439 | 691.52 | 209 | 691.64 | 243 | 691.14 | 115 | 690.50 | 20 | 690.54 | 24 | ..... | .... | ..... | ..... |
| 28 | 691.52 | 209 | 691.14 | 64 | 693.12 | 825 | 692.23 | 217 | 693.79 | 1200 | 691.52 | 209 | 691.60 | 231 | 691.04 | 96 | 690.54 | 24 | 690.46 | 16 | ..... | .... | ..... | ..... |
| 29 | 691.58 | 225 | 691.56 | 71 | 692.62 | 590 | 692.19 | 217 | 693.79 | 1200 | 691.48 | 198 | 691.54 | 214 | 691.00 | 88 | 690.58 | 29 | 690.50 | 20 | ..... | .... | ..... | ..... |
| 30 | 691.75 | 275 | 691.50 | 56 | 692.50 | 540 | ..... | .... | 694.58 | 1660 | 691.35 | 164 | 692.56 | 565 | 691.00 | 88 | 690.58 | 29 | 690.60 | 31 | ..... | .... | ..... | ..... |
| 31 | ..... | ..... | 691.56 | 71 | 693.12 | 825 | ..... | .... | 693.96 | 1300 | ..... | .... | 692.73 | 640 | ..... | .... | 690.50 | 20 | 690.62 | 33 | ..... | .... | ..... | ..... |

## Monthly Discharge of Whiteman's Creek near Burford for 1915-6

Drainage Area 154 Square Miles

| Month | Discharge in Second-feet | | | Discharge in Second-feet per Square Mile | | | Run-off |
|---|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Maximum | Minimum | Mean | Depth in Inches on Drainage Area |
| November (1915) | 334 | 31 | 117 | 2.17 | .20 | .76 | .85 |
| December " | 251 | 56 | 101 | 1.63 | .36 | .66 | .76 |
| January (1916) | 1,025 | 88 | 489 | 6.66 | .57 | 3.18 | 3.67 |
| February | 860 | 164 | 267 | 5.58 | 1.06 | 1.73 | 1.86 |
| March | 1,660 | 88 | 312 | 10.78 | .57 | 2.03 | 2.34 |
| April | 825 | 164 | 376 | 5.36 | 1.06 | 2.44 | 2.72 |
| May | 640 | 122 | 271 | 4.16 | .79 | 1.76 | 2.03 |
| June | 685 | 88 | 284 | 4.45 | .57 | 1.84 | 2.05 |
| July | 70 | 16 | 36 | .45 | .10 | .23 | .27 |
| August | 39 | 8 | 25 | .25 | .05 | .16 | .18 |
| September | 29 | 4 | 17 | .19 | .03 | .11 | .07 |
| October | | | | | | | |
| The period | 1,660 | 4 | 217 | 10.78 | .03 | .41 | 16.83 |

Gauge reading discontinued from November 1st, 1916.

## Miscellaneous Measurements

| River | Location | Date | Discharge in Sec-ft. |
|---|---|---|---|
| Beaver | Feversham | Dec. 8, 1915 | 22 |
| " | " | Jan. 14, 1916 | 39 |
| " | " | Feb. 9, 1916 | 76 |
| " | " | Feb. 10, 1916 | 78 |
| " | " | Feb. 24, 1916 | 54 |
| Kabuskong | Bonfield | Nov. 4, 1915 | 33 |
| " | " | Dec. 21, 1915 | 28 |
| " | " | June 2, 1916 | 139 |
| " | " | July 7, 1916 | 79 |
| Rainy | Emo | May 30, 1916 | 41,584 |
| Snake Creek | Port Elgin | Nov. 23, 1915 | 85 |
| Sydenham | Florence | Nov. 11, 1915 | 69 |
| Winnipeg | Dalles Rapids | Aug. 30, 1916 | 27,141 |
| " | " " | Sept. 4, 1916 | 24,731 |
| " | " " | Sept. 9, 1916 | 24,205 |
| " | Throat Rapids | Sept. 8, 1916 | 5,807 |
| " | White Dog Falls | June 28, 1916 | 40,746 |
| " | White Dog Falls, S. Chan. | June 19, 1916 | 35,674 |
| " | White Dog Falls, N. Chan. | Sept. 30, 1916 | 27,404 |

## EASTERN ONTARIO DISTRICT

### Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in Eastern Ontario District for which such data are available in this report

| Station | Drainage Area Sq. miles | 1915 | 1916 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Nov. | Dec. | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sept. | Oct. | Year. |
| Bonnechere River near Golden Lake | 575 | .24 | .27 | .34 | .52 | .59 | 2.80 | 3.57 | 1.62 | .91 | .48 | .52 | .43 | 1.02 |
| Madawaska River at Madawaska | 800 | .36 | .36 | .46 | .73 | .53 | 2.92 | 2.48 | .98 | .55 | .29 | .26 | .30 | .85 |
| Mississippi River at Ferguson's Falls | 1,042 | .40 | .45 | .67 | 1.11 | .70 | 4.94 | 3.55 | 3.24 | 1.89 | .57 | .37 | .36 | 1.52 |
| Mississippi River at Galetta | 1,456 | .29 | .35 | .54 | .89 | .67 | 3.82 | 2.48 | 1.88 | 1.30 | .44 | .28 | .27 | 1.10 |
| Mississippi River near Snow Road | 446 | .57 | .65 | .81 | .96 | .91 | 4.89 | 3.84 | 3.73 | 2.36 | .94 | .64 | .62 | 1.74 |
| Moira River near Foxboro | 1,038 | .40 | .48 | 1.11 | 1.92 | .99 | 5.55 | 2.36 | 3.65 | 1.11 | .25 | .13 | .10 | 1.48 |
| Napanee River near Napanee | 300 | .39 | .53 | 1.02 | 2.33 | 1.79 | 6.84 | 3.00 | 4.26 | 1.73 | .24 | .14 | .16 | 1.86 |
| Petawawa River near Petawawa | 1,572 | ..... | * .39 | .40 | .48 | .48 | 1.78 | 2.77 | 2.28 | 1.40 | .63 | .44 | .46 | 1.08 |
| Tay River near Glen Tay | 204 | .37 | .48 | .77 | .75 | 1.74 | 2.50 | 2.44 | 3.69 | 1.78 | .97 | .73 | .36 | 1.38 |
| York River near Bancroft | 374 | .60 | .66 | .73 | .92 | 2.01 | 3.80 | 2.67 | 1.45 | .74 | .64 | .58 | .44 | 1.27 |

*December 15-31.

## NORTHERN ONTARIO DISTRICT

### Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in the Northern Ontario District for which such data are available in this report.

| Station | Drainage Area Sq. miles | 1915 | | 1916 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Year. |
| Aux Sables River near Massey | 524 | 1.34 | 1.16 | .69 | .76 | .69 | 4.68 | 3.49 | 4.14 | 1.87 | .32 | .39 | 1.40 | 1.74 |
| Blanche River near Englehart | 430 | .90 | 1.59 | .50 | .44 | .64 | 5.86 | 3.12 | .73 | .60 | .57 | .50 | .66 | 1.34 |
| Frederickhouse River at Frederickhouse | 1,260 | 1.72 | 1.38 | 1.63 | 1.68 | 1.42 | 2.85 | 6.75 | 1.66 | 1.19 | .46 | .26 | .35 | 1.78 |
| Kagawong River at Kagawong | 94 | .24 | .26 | .48 | .57 | .79 | 2.51 | 2.20 | 1.07 | .66 | .36 | .34 | .28 | .81 |
| Maganetawan River (No. Branch) near Burk's Falls | 107 | 1.55 | 1.77 | 1.78 | 2.64 | 1.38 | 8.03 | 4.81 | 3.23 | .90 | .28 | .65 | 2.10 | 2.42 |
| Maganetawan River (So. Branch) near Burk's Falls | 257 | 1.18 | 1.35 | 1.48 | 2.16 | 1.32 | 5.37 | 4.56 | 2.92 | 1.42 | .58 | .67 | 1.21 | 2.01 |
| Mississagi River at Iron Bridge | 3,565 | *1.85 | 1.83 | .95 | .63 | .51 | 2.31 | 2.53 | 2.01 | 1.21 | .48 | .53 | 1.07 | 1.30 |
| Muskoka River (North Branch) near Port Sydney | 560 | 1.14 | 1.22 | 1.42 | 1.97 | 1.02 | 5.72 | 3.12 | 1.78 | .58 | .35 | .24 | .99 | 1.62 |
| Muskoka River (So. Branch) at Tretheway's Falls | 668 | .86 | .94 | 1.18 | 2.10 | 1.65 | 4.66 | 4.49 | 3.21 | 1.23 | .64 | .57 | .60 | 1.84 |
| Seguin River near Parry Sound | 380 | 2.26 | 1.71 | 1.36 | 2.64 | 1.00 | 6.24 | 5.78 | 1.78 | .72 | .47 | .72 | .99 | 2.13 |
| South River near Powassan | 294 | 1.00 | .84 | 1.30 | 1.14 | 1.41 | 7.43 | 3.34 | 1.48 | .55 | .30 | .78 | 1.72 | 1.77 |
| Spanish River at Espanola | 4.490 | 1.07 | 1.36 | .86 | .57 | .69 | 4.42 | 3.39 | 1.97 | 1.04 | .62 | .56 | .68 | 1.43 |
| Sturgeon River near Smoky Falls | 2,250 | .93 | 1.25 | .75 | .87 | 1.00 | 4.07 | 4.54 | 2.01 | 1.05 | .70 | .46 | .81 | 1.53 |
| Vermilion River near Whitefish | 1,580 | 1.00 | 1.15 | .68 | .60 | .44 | 5.71 | 3.44 | 1.84 | 1.16 | .15 | .11 | .22 | 1.37 |
| Wanapitei River near Wanapitei | 940 | .78 | .76 | .75 | .68 | .69 | 1.39 | 4.90 | 2.08 | 1.90 | 1.04 | .51 | ..... | 1.41 |

*November 15-30.

## NORTH-WESTERN ONTARIO DISTRICT

### Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in the North-Western Ontario District for which such data are available in this report

| Station | Drainage Area Sq. miles | 1915 | | 1916 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Year. |
| Eagle River at Eagle River | 970 | .30 | .33 | .37 | .39 | .35 | .48 | 1.65 | 1.99 | 1.31 | 1.02 | .84 | .75 | .82 |
| English River at Ear Falls | 11,700 | .62 | .70 | .64 | .56 | .47 | .46 | .82 | 1.55 | 1.70 | 1.49 | 1.09 | .78 | .93 |
| English River at Manitou Falls | 14,600 | .58 | .65 | .60 | .53 | .44 | .43 | .74 | 1.37 | 1.43 | 1.31 | .97 | .70 | .84 |
| English River at Oak Falls | 15,570 | .59 | .64 | .60 | .53 | .45 | .49 | .75 | 1.38 | 1.52 | 1.33 | .96 | .71 | .85 |
| Footprint River at Rainy Lake Falls | 590 | .14 | .14 | .14 | .14 | .16 | .39 | 1.81 | 1.80 | 1.01 | .55 | .36 | .23 | .57 |

## SOUTH-WESTERN ONTARIO DISTRICT

### Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in South-Western Ontario District for which such data are available in this report.

| Station | Drainage Area Sq. miles | 1915 | | 1916 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Year. |
| Ausable River near Arkona | 408 | .67 | 1.29 | 4.65 | .91 | 2.38 | 2.45 | 2.53 | 1.03 | .10 | .08 | .05 | .09 | 1.36 |
| Beaver River near Kimberley | 100 | .70 | .73 | 2.58 | 2.63 | 2.06 | 3.30 | 1.91 | 1.29 | .58 | .45 | .39 | .51 | 1.42 |
| Bighead River at Meaford | 132 | .94 | 1.11 | 1.38 | 1.52 | 1.77 | 2.21 | 1.20 | 1.11 | .48 | .35 | .26 | .48 | 1.06 |
| Black River near Washago | 585 | .69 | .86 | 1.43 | 2.46 | 1.60 | 6.64 | 3.15 | 1.26 | .42 | .16 | .08 | .48 | 1.59 |
| Credit River at Cataract Junction | 85 | .69 | .61 | 1.73 | 1.54 | 1.82 | 3.13 | .91 | .81 | .36 | .26 | .22 | .38 | 1.04 |
| Maitland River at Ben Miller | 950 | 1.21 | 1.84 | 4.36 | 1.53 | 2.93 | 4.54 | 1.66 | 1.07 | .19 | .11 | .10 | .16 | 1.64 |
| Nottawasaga River near Nicolston | 416 | .59 | .55 | 1.63 | 1.05 | 1.74 | 3.49 | 1.10 | .92 | .27 | .16 | .18 | .34 | 1.00 |
| Rocky Saugeen River near Markdale | 96 | .80 | 1.00 | 2.17 | 2.35 | 1.24 | 3.58 | 2.06 | 1.69 | .92 | .65 | .60 | .61 | 1.47 |
| Saugeen River near Port Elgin | 1,565 | .90 | 1.22 | 3.26 | 3.13 | 2.70 | 4.94 | 1.74 | 1.27 | .44 | .29 | .26 | .38 | 1.70 |
| Saugeen River near Walkerton | 850 | .94 | .96 | 2.88 | 1.54 | 1.49 | 5.23 | 1.92 | 1.45 | .51 | .33 | .29 | .39 | 1.49 |
| Sydenham River near Owen Sound | 71 | .87 | .82 | 3.08 | 1.41 | 1.75 | 3.58 | 1.89 | 1.89 | .55 | .32 | .27 | .38 | 1.39 |
| Thames River (Main Stream) near Byron | 1,270 | 1.05 | .95 | 5.78 | 1.01 | 2.10 | 2.71 | 2.63 | 1.58 | .22 | .10 | .09 | .16 | 1.53 |
| Thames River (South Branch) near Ealing | 515 | .91 | 1.10 | 4.16 | 1.40 | 2.33 | 2.39 | 2.35 | 1.81 | .28 | .24 | .14 | .22 | 1.45 |
| Thames River (North Branch) near Fanshawe | 650 | 1.05 | 1.33 | 5.45 | .83 | 1.66 | 2.75 | 1.42 | 1.42 | .19 | .04 | .03 | .05 | 1.36 |

## SOUTH-WESTERN ONTARIO DISTRICT

### GRAND RIVER BASIN

### Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations on Grand River and tributaries for which such data are available in this report

| Station | Drainage Area Sq. miles | 1915 | | 1916 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Nov. | Dec. | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sept. | Oct. | Year |
| Grand River at Belwood | 280 | .86 | .57 | 4.06 | .95 | 1.86 | 6.20 | 1.03 | .62 | .04 | .01 | .01 | .03 | 1.35 |
| Grand River near Conestogo | 550 | .98 | .57 | 3.15 | .75 | 1.76 | 4.90 | 1.33 | 1.47 | .14 | .05 | .04 | .08 | 1.26 |
| Grand River at Galt | 1,360 | .77 | .47 | 2.23 | .70 | 1.59 | 3.52 | 1.25 | 1.51 | .19 | .10 | .09 | .17 | 1.05 |
| Grand River at Glen Morris | 1,390 | 1.15 | .52 | 2.38 | 1.08 | 1.67 | 3.82 | 1.61 | 1.77 | .35 | .25 | .24 | .33 | 1.26 |
| Grand River at Brantford | 2,000 | .82 | .57 | 3.17 | .96 | 1.53 | 3.21 | 1.64 | 1.69 | .32 | .22 | .15 | .25 | 1.21 |
| Grand River at York | 2,280 | .73 | .80 | 3.32 | 1.39 | 1.94 | 3.67 | 1.74 | 1.78 | .30 | .16 | .14 | .24 | 1.35 |
| Irvine River near Salem | 67 | .81 | .22 | 5.67 | .75 | 4.43 | 8.36 | 1.28 | 3.18 | .09 | .03 | ..... | ..... | 2.48 |
| Conestogo River at St. Jacob's | 305 | 1.11 | .48 | 4.52 | .73 | 2.40 | 4.91 | .77 | 1.55 | .16 | .02 | ..... | ..... | 1.66 |
| Speed River near Guelph | 77 | .86 | .51 | 2.55 | 1.61 | 3.68 | 3.83 | 1.88 | 1.51 | .22 | .09 | .06 | .27 | 1.42 |
| Speed River at Hespeler | 250 | .81 | .62 | 2.00 | 1.34 | 1.64 | 3.62 | 1.71 | 2.07 | .48 | .38 | .36 | .38 | 1.28 |
| Galt Creek at Galt | 45 | .60 | .51 | 1.91 | 1.80 | 1.42 | 2.29 | 1.58 | 1.22 | .36 | .27 | ..... | ..... | 1.20 |
| Nith River near Canning | 365 | 1.14 | .74 | 3.39 | 1.56 | 2.95 | 3.15 | 2.19 | 1.87 | .36 | .28 | .25 | .34 | 1.52 |
| Whiteman's Creek near Burford | 154 | .76 | .66 | 3.18 | 1.73 | 2.03 | 2.44 | 1.76 | 1.84 | .23 | .16 | .11 | ..... | 1.41 |
| Fairchild's Creek near Onondaga | 115 | .45 | .36 | 7.07 | 1.81 | 3.30 | 4.53 | 2.33 | 1.09 | .17 | .11 | ..... | ..... | 2.12 |
| Boston Creek near York | 125 | .37 | .40 | 3.22 | 1.29 | 1.92 | 2.46 | 1.45 | 1.87 | .13 | .06 | ..... | ..... | 1.31 |

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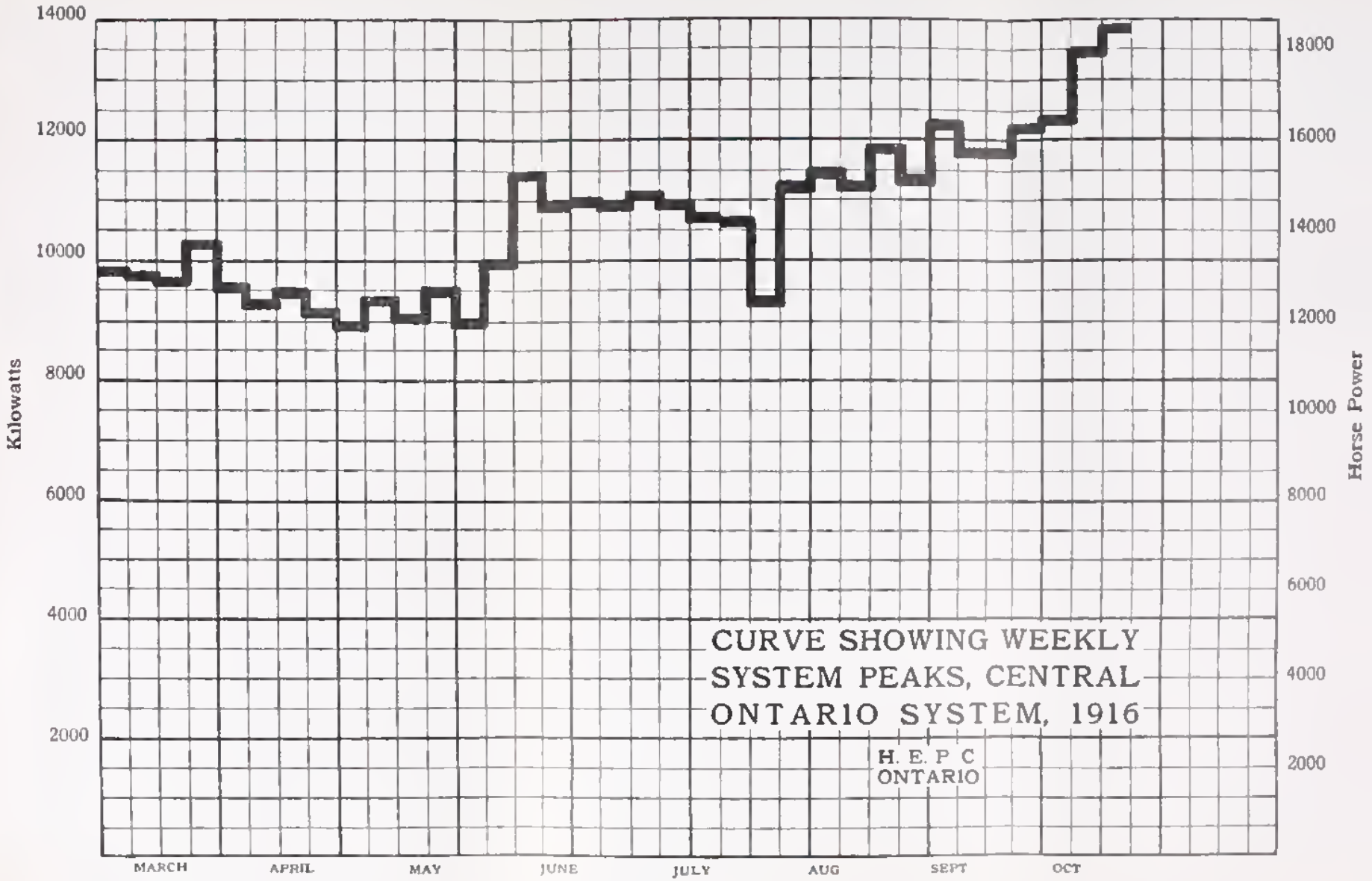
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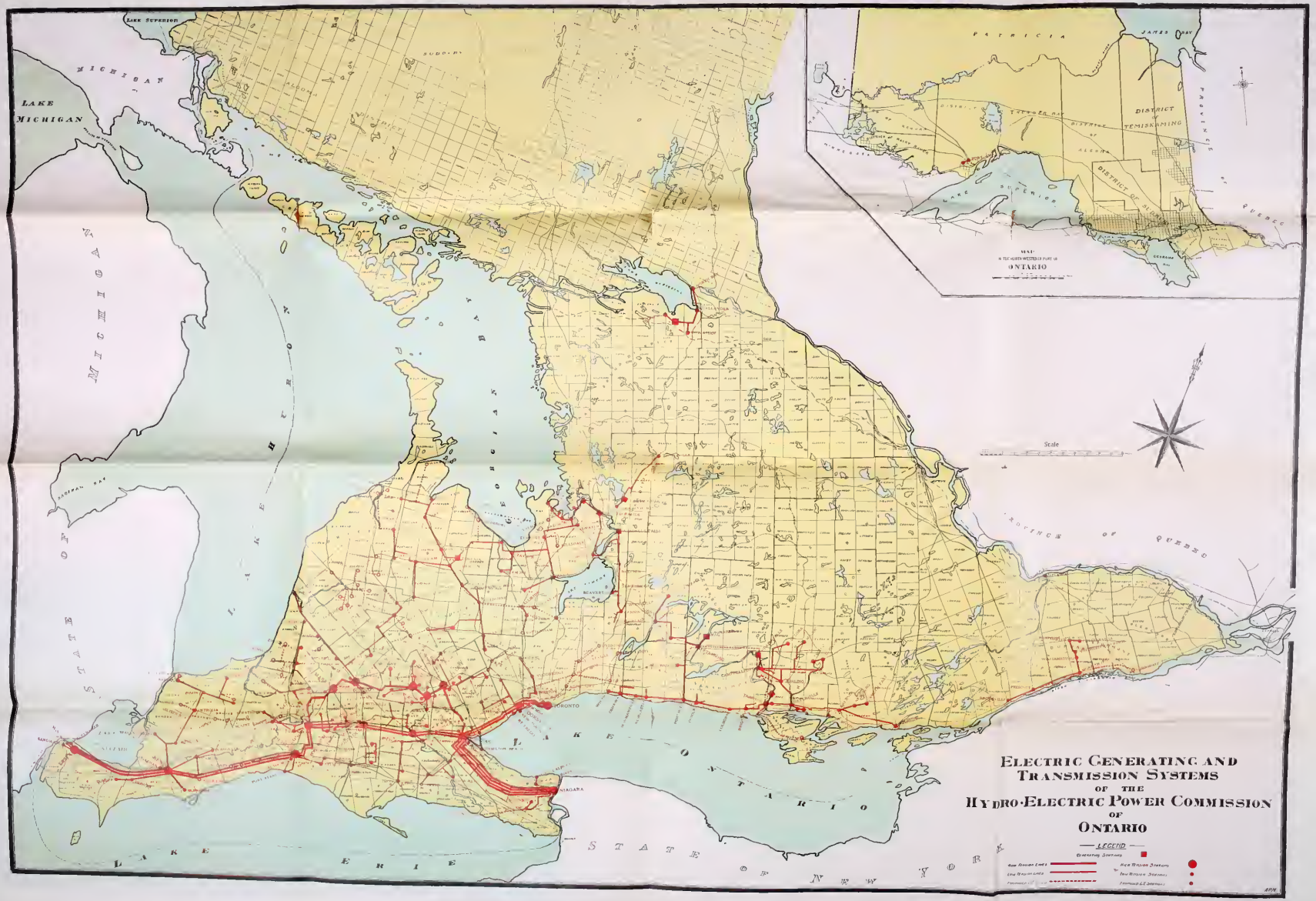
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